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**VOLUME II
MATERIALS PROPERTY HANDBOOK**

**EFFECT OF ENVIRONMENT
ON
INSULATION MATERIALS**

By

R.T. Parmley, F.J. Smith, A.P. Glassford, J. Coleman and D.R. Stevenson

LOCKHEED MISSILES & SPACE COMPANY, INC.
A SUBSIDIARY OF LOCKHEED AIRCRAFT CORPORATION

PREPARED FOR

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16. Abstract Twenty candidate multilayer insulation and insulation related materials were subjected to eight conditions that represent possible operational environments. These exposures include ground contaminants, various operational temperatures, space vacuum, space-vented propellants, and tank leakage. The objective of this program was to obtain and evaluate the data from these exposures to provide both a quantitative and qualitative description of the degradation to certain physical and thermal properties, and from this, to obtain a better understanding of the environmental effects on the insulation performance. Extensive tabular and graphical test results are provided on the effects of the environmental exposures on material properties along with listings of insulation materials recommended for use in: <ul style="list-style-type: none"> o Oxygen and fluorine tank insulation systems o Vacuum, purged and unprotected insulation systems o Specific environments and exposure times 		13. Type of Report and Period Covered Final Report	
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FOREWORD

The Lockheed Missiles & Space Company, Inc. (LMSC) is submitting this final report in partial fulfillment of the requirements of Contract NAS 3-14342, Effect of Environments on Insulation Materials. Mr. R. T. Parmley was the LMSC Program Manager and Mr. James R. Barber was the NASA-Lewis Research Center Project Manager. The work is presented in two volumes. The first volume (NASA CR 120978) covers the total scope of the program, a summary and discussion of the results plus significant conclusions developed from the results. Volume II (NASA CR 120979) is basically a materials property handbook providing the detailed test results in tabular and graphical form.

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INTRODUCTION

Due to the extensive amount of test data obtained in this program, it was deemed necessary to present the results in a separate materials handbook volume for ease of reference. The data are presented by material type, material property and environmental exposure in that order.

The data are given in tabular form on the left hand page with the corresponding graphs on the right hand page, where appropriate. Engineering units are used with secondary scales in the International System of Units. The data are plotted against exposure time and in some cases, where appropriate, exposure temperature. The ordinate (vertical) scale on the graphs for a particular material and property are kept constant for all eight environmental exposure conditions so rapid visual comparisons can be made on the effects of different environments on that property for that material.

The raw test data were computer reduced, tabulated and plotted to insure uniformity of presentation and accuracy. All the data cards were checked twice to insure the raw input values are correct. The computer program was carefully checked out to insure the data reduction, tabular listing and plotting routines were correct.

For some of the tabular listings, a notation DESTROYED IN ENVIRONMENT appears. This notation indicates the sample deteriorated in the environment to the extent the post exposure tests could not be performed. For example, the 72-hour salt air environment removed the aluminized coatings so emittance values could not be measured; therefore, the above notation appears in the tabular listings. However, the tensile strength value could still be measured on the surviving substrate for the same salt air environment and strength values are provided in the appropriate tables and graphs.

Tensile strengths for the shields, films and spacers are reported in force/unit width instead of force/unit area. It was found to be very difficult to

measure the thickness of, for example, 1/4 mil (6.4×10^{-3} mm) Mylar or Kapton without "indenting" the film and thus altering its tensile properties. For this reason, the above listed force/unit width values are used. Nominal thicknesses for the different test materials are provided in Table 5, Volume I.

The emittance values were measured for both sides of double aluminum and gold coated Mylar films. The sides were arbitrarily designated "L" and "O" and are reported as such in this volume.

The data are presented within the same major groupings used in Volume I.

- Radiation Shields (6 each)
- Spacers (4 each)
- Ground-Hold Materials (4 each)
- Miscellaneous Materials (6 each)

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MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY - WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.24800+00
	10.0	.24750+00
I	.0	.27700+00
	10.0	.27700+00
I	.0	.26950+00
	150.0	.26900+00
I	.0	.24700+00
	150.0	.24630+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.2150+00
	24.0	.24900+00
I	.0	.24500+00
	24.0	.24480+00
I	.0	.25700+00
	240.0	.25550+00
I	.0	.27200+00
	240.0	.27120+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

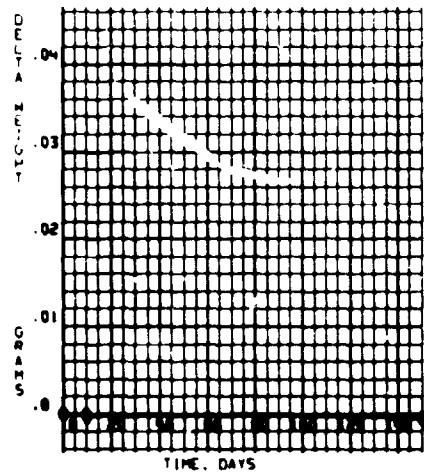
F	DEG K	DEG K	GRAMS
I	-	-	.25700+00
	660.	367.	.25550+00
I	-	-	.27200+00
	660.	367.	.27120+00
I	-	-	.26950+00
	530.	294.	.26900+00
I	-	-	.24900+00
	530.	294.	.24650+00
I	-	-	.26450+00
	140.	78.	.26520+00
I	-	-	.24700+00
	140.	78.	.24740+00
I	-	-	.26600+00
	37.	21.	.26500+00
I	-	-	.25050+00
	37.	21.	.25000+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.27200+00
	24.0	.26950+00
I	.0	.23900+00
	24.0	.23450+00
I	.0	.24000+00
	72.0	.23950+00
I	.0	.25100+00
	72.0	.25100+00
I	.0	.24600+00
	240.0	.24700+00
I	.0	.26550+00
	240.0	.26600+00

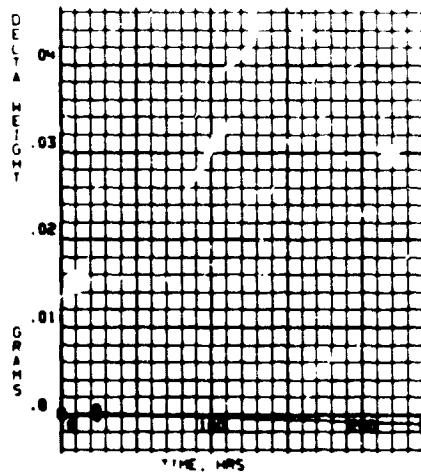
NOTE.
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL

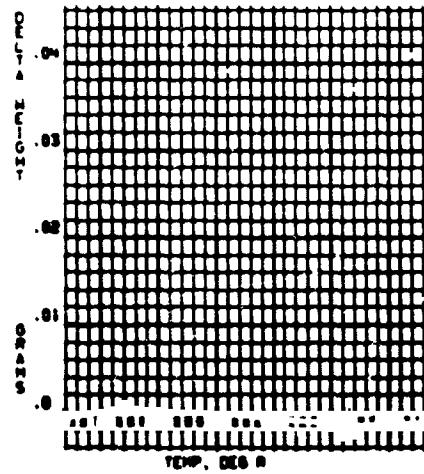


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

PROPERTY - DELTA HEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY - WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS	F	HOURS	GRAMS
	.0	.24350+00		.0	.26800+00
	12.0	.24400+00		12.0	.28350+00
	.0	.26150+00		.0	.25400+00
	12.0	.26150+00		12.0	.28800+00
	.0	.24700+00		.0	.26400+00
	24.0	.24850+00		24.0	.27200+00
	.0	.26700+00		.0	.28050+00
	24.0	.26540+00		24.0	.29650+00
	.0	.27450+00		.0	.26750+00
	72.0	.27450+00		72.0	.31000+00
	.0	.25500+00		.0	.27750+00
	72.0	.25550+00		72.0	.32400+00

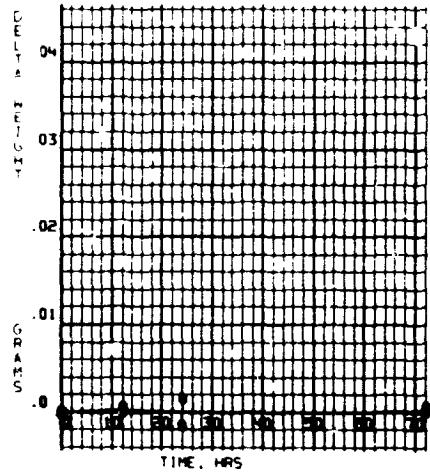
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	GRAMS	F	DAYS	GRAMS
	.0	.24050+00		.0	.25350+00
	.5	.24100+00		4.2	.25550+00
	.0	.26250+00		.0	.25400+00
	.5	.26260+00		4.2	.25550+00
	.0	.25450+00		.0	.24850+00
	2.0	.25530+00		150.0	.25000+00
	.0	.27550+00		.0	.27300+00
	2.0	.27620+00		150.0	.27350+00
	.0	.25750+00			
	24.0	.25720+00			
	.0	.26750+00			
	24.0	.26750+00			

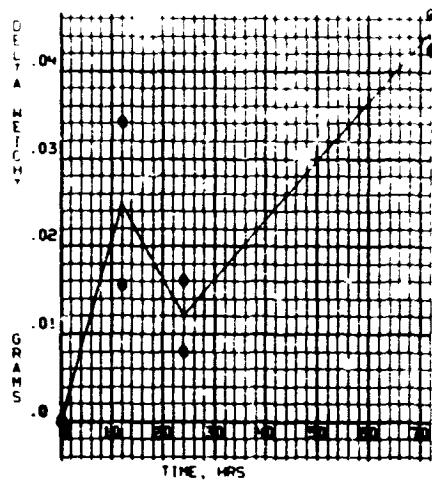
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.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE AL MINIMIZED MYLAR, 1/4 MIL.

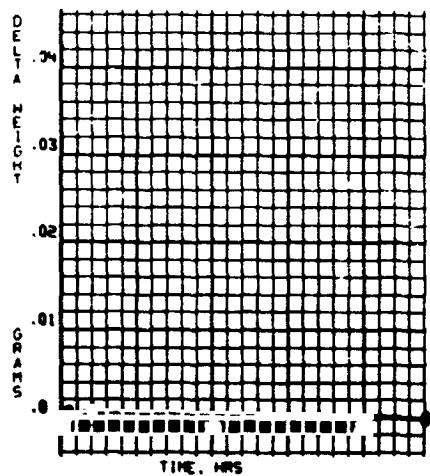


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C.)

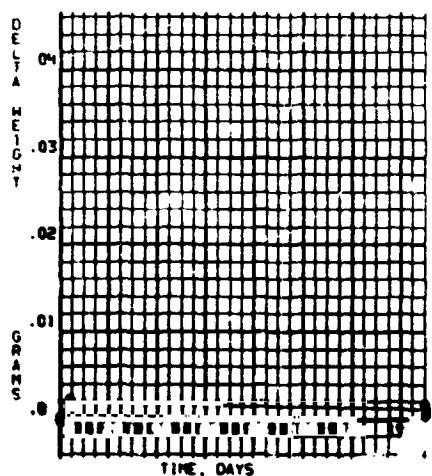
PROPERTY - DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C.)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C.)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY - WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE. 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.25350+00
I	4.2	.25850+00
I	.0	.26600+00
I	4.2	.27100+00
I	.0	.25200+00
I	150.0	.25800+00
I	.0	.26850+00
I	150.0	.27440+00

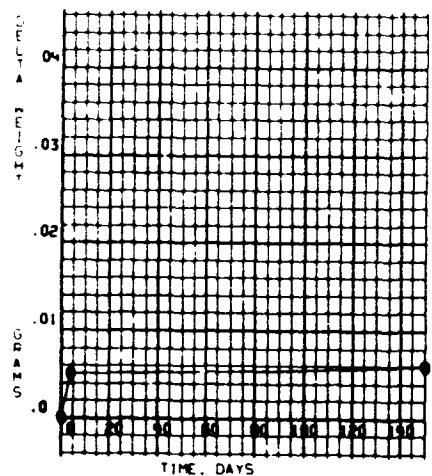
ENVIRONMENT 8 (GH)
95 PERCENT P.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C).4 HR

F	F	P.P.	TORR	GRAMS
I	.000			.26200+00
I	.100-02			.26150+00
I	.000			.26750+00
I	.100-02			.26820+00
I	.000			.26550+00
		.760+03	SAMPLE DESTROYED	
I	.000			.25350+00
		.760+03	SAMPLE DESTROYED	

NOTE.
.SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY - DELTA H₂H'



ENVIRONMENT (BIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 1			ENVIRONMENT 2 (AB)		
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DEG	LB/IN	F	HOURS	LB/IN
.0		.650+01	.0	.114+04	
.0		.514+01	.901+03	24.0	.392+01
10.0		.476+01	.834+03	24.0	.410+01
10.0		.580+01	.102+04	240.0	.548+01
150.0		.472+01	.827+03	240.0	.540+01
150.0		.490+01	.859+03		.946+03

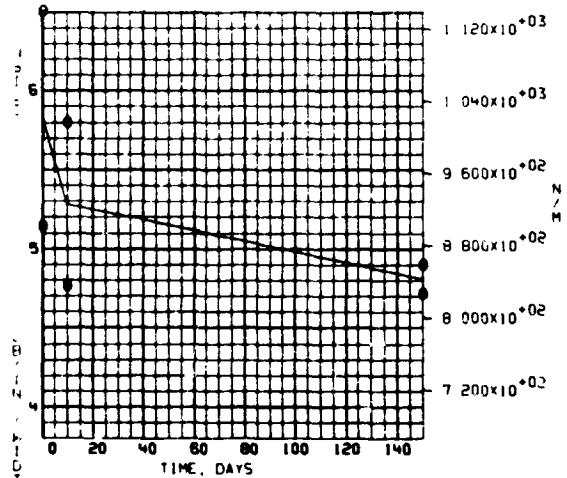
ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	DEG	R	DEG	K	LB/IN	N/M	F	HOURS	LB/IN	N/M
660.	367.		.548+01		.960+03		24.0		.416+01	.729+03
660.	367.		.540+01		.946+03		24.0		.380+01	.666+03
530.	294.		.566+01		.992+03		72.0		.394+01	.690+03
530.	294.		.640+01		.112+04		72.0		.410+01	.718+03
140.	78.		.548+01		.960+03		240.0		.460+01	.806+03
140.	78.		.534+01		.936+03		240.0		.440+01	.771+03
37.	21.		.470+01		.823+03					
37.	21.		.456+01		.799+03					

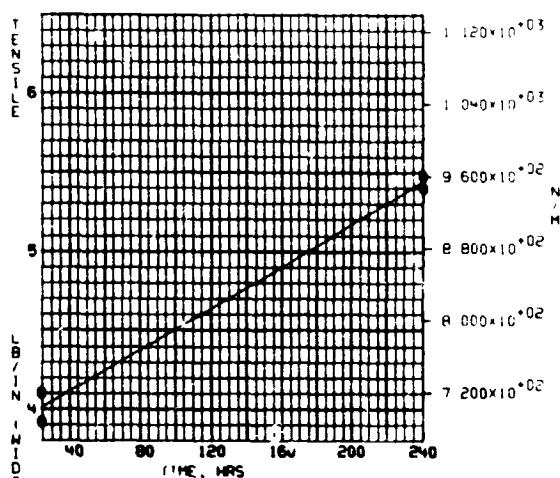
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED MYLAR, 1/4 MIL

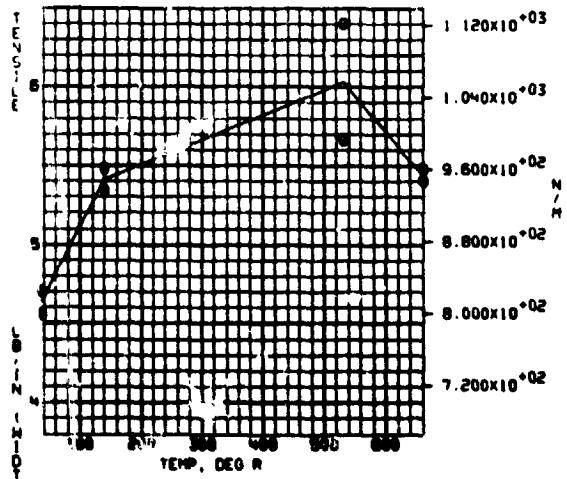


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

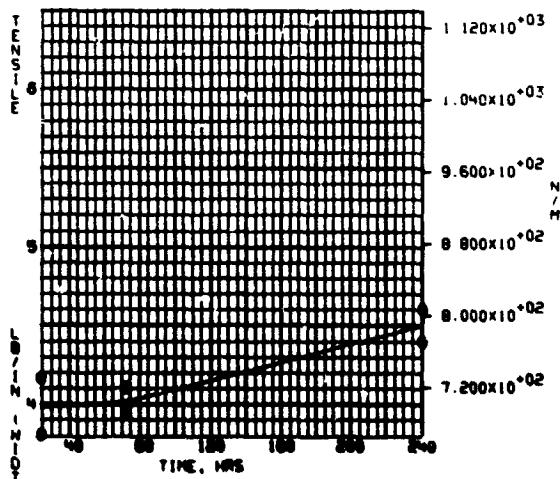
PROPERTY- TENSILE



ENVIRONMENT 2(Ab)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(Bcde)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	LB/IN	N/M	F	HOURS	LB/IN	N/M
	12.0	.456+01	.799+03		12.0	.446+01	.781+03
	12.0	.454+01	.795+03		12.0	.460+01	.806+03
	24.0	.442+01	.774+03		24.0	.536+01	.939+03
	24.0	.486+01	.852+03		24.0	.448+01	.785+03
	72.0	.536+01	.939+03		72.0	.474+01	.831+03
	72.0	.478+01	.838+03		72.0	.496+01	.869+03

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

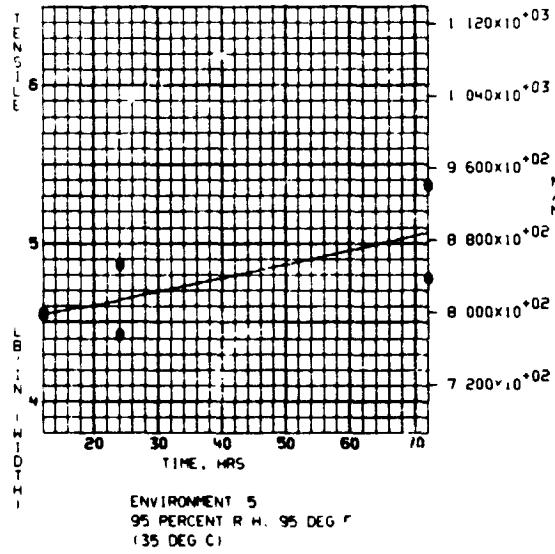
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	LB/IN	N/M	F	DAYS	LB/IN	N/M
	.5	.504+01	.883+03		4.2	.446+01	.781+03
	.5	.450+01	.788+03		4.2	.490+01	.859+03
	2.0	.496+01	.869+03		150.0	.532+01	.932+03
	2.0	.524+01	.918+03		150.0	.544+01	.953+03
	24.0	.524+01	.918+03				
	24.0	.520+01	.911+03				

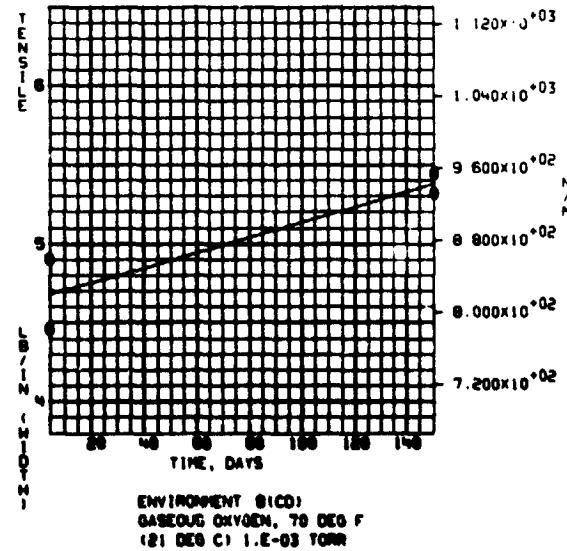
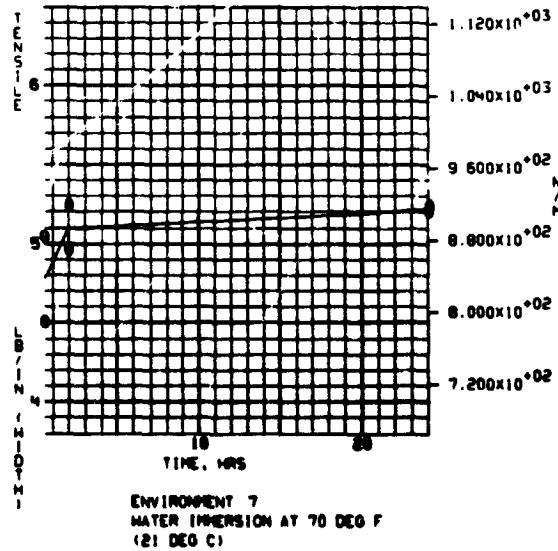
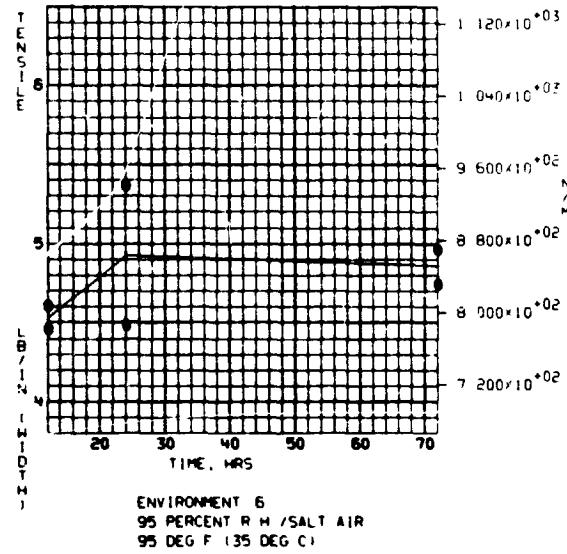
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL



PROPERTY - TENSILE



MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

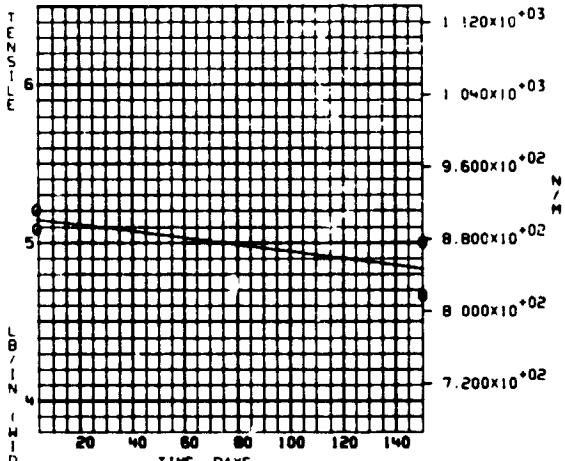
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	DAYS	LB/IN	N/M	F	F	P.P. TORR	LB/IN	N/M
	4.2	.508+01	.890+03		.100-02		.540+01	.946+03
	4.2	.520+01	.911+03		.100-02		.520+01	.911+03
	150.0	.500+01	.876+03		.760+03		SAMPLE DESTROYED	
	150.0	.466+01	.816+03		.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY - TENSILE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
	.0	.310-01
	10.0	.300-01
	.0	.310-01
	10.0	.290-01
	.0	.320-01
	150.0	.400-01
	.0	.310-01
	150.0	.410-01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	EMITTANCE
	.0	.290-01
	24.0	.300-01
	.0	.280-01
	24.0	.290-01
	.0	.310-01
	240.0	.280-01
	.0	.300-01
	240.0	.280-01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R	DEG K	EMITTANCE
	-	-	.310-01
	660.	367.	.280-01
	-	-	.300-01
	660.	367.	.280-01
	-	-	.310-01
	530.	294.	.270-01
	-	-	.300-01
	530.	294.	.300-01
	-	-	.290-01
	140.	78.	.310-01
	-	-	.290-01
	140.	78.	.280-01
	-	-	.310-01
	37.	21.	.300-01
	-	-	.300-01
	37.	21.	.280-01

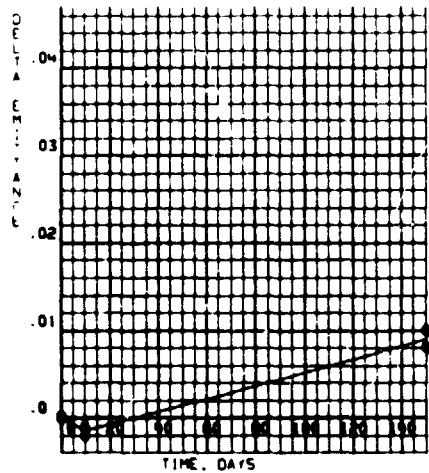
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
	.0	.310-01
	24.0	.290-01
	.0	.300-01
	24.0	.280-01
	.0	.310-01
	72.0	.280-01
	.0	.290-01
	72.0	.260-01
	.0	.300-01
	240.0	.270-01
	.0	.310-01
	240.0	.300-01

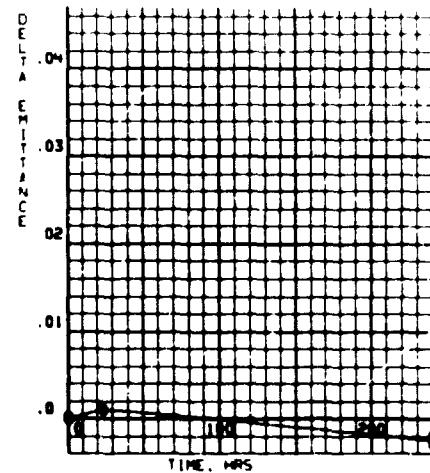
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL

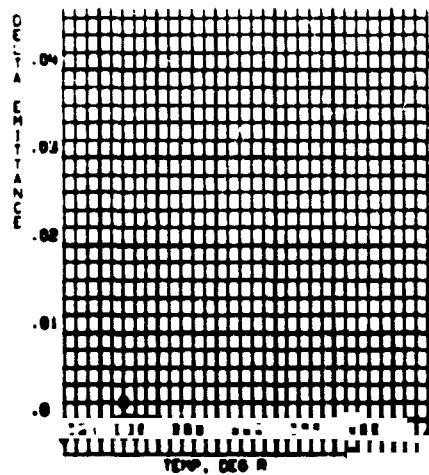
PROPERTY - DELTA EMITTANCE



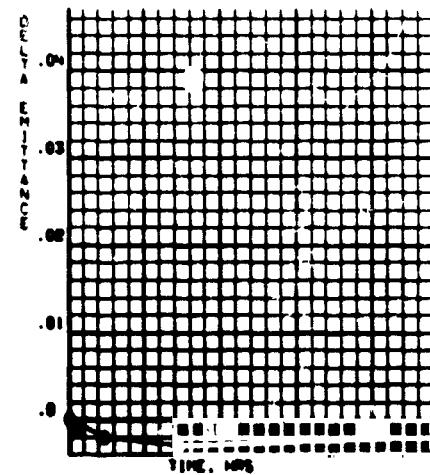
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -EMITTANCE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.300-01
	12.0	.270-01
I	.0	.290-01
	12.0	.260-01
I	.0	.290-01
	24.0	.260-01
I	.0	.300-01
	24.0	.260-01
I	.0	.290-01
	72.0	.280-01
I	.0	.290-01
	72.0	.760-01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.300-01
	12.0	.300-01
I	.0	.290-01
	12.0	.280-01
I	.0	.300-01
	24.0	.310-01
I	.0	.300-01
	24.0	.530-01
I	.0	.300-01
	72.0	SAMPLE DESTROYED
I	.0	.300-01
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

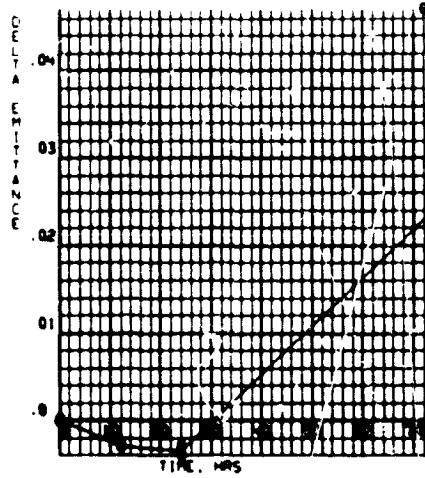
F	HOURS	EMITTANCE
I	.0	.290-01
	.5	.290-01
I	.0	.300-01
	.5	.310-01
I	.0	.290-01
	2.0	.280-01
I	.0	.290-01
	2.0	.310-01
I	.0	.280-01
	24.0	.330-01
I	.0	.310-01
	24.0	.300-01

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.290-01
	4.2	.270-01
I	.0	.280-01
	4.2	.290-01
I	.0	.280-01
	150.0	.360-01
I	.0	.280-01
	150.0	.370-01

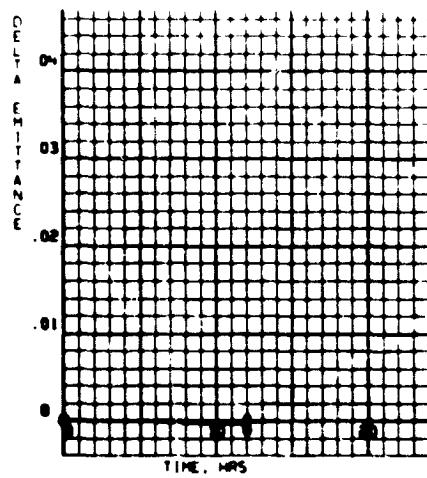
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED MYLAR .174 MIL

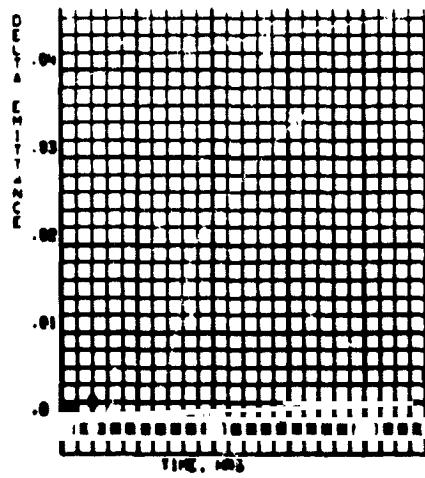


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

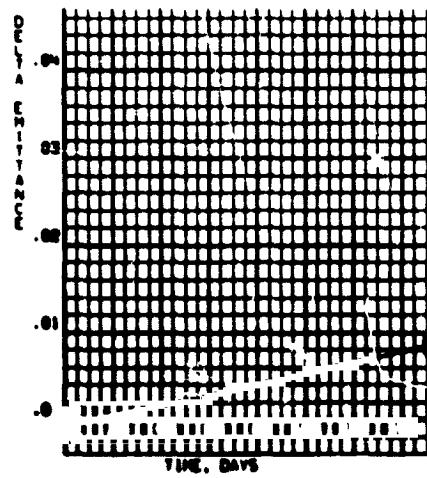
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8C
IMMERSIVE ENVIRON. 70 DEG F
(21 DEG C) 1.0-03 MMHg

MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.290-01
	4.2	.330-01
	.0	.300-01
	4.2	.320-01
	.0	.300-01
	150.0	.310-01
	.0	.280-01
	150.0	.310-01

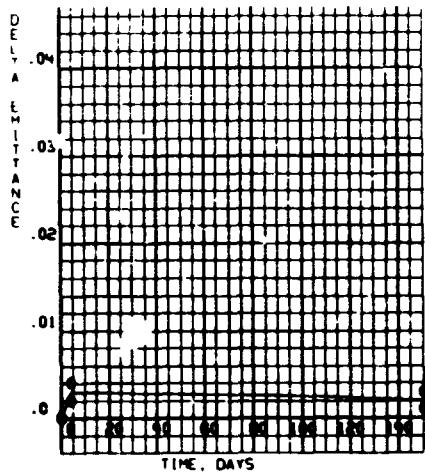
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	EMITTANCE
	.000		.290-01
	.100-02		.350-01
	.000		.280-01
	.100-02		.330-01
	.000		.290-01
	.760+03	SAMPLE DESTROYED	
	.000		.280-01
	.760+03	SAMPLE DESTROYED	

NOTE. •SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
•ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
•THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
•THE E+01 ETC. IS THE EXPONENT OF 10
•THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY- DELTA EMITTANCE



ENVIRONMENT (BIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -REFLECTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	REFLECTANCE
I	.0	.896+00
	10.0	.875+00
I	.0	.887+00
	10.0	.876+00
I	.0	.912+00
	150.0	.877+00
I	.0	.900+00
	150.0	.889+00

ENVIRONMENT 2 (AH)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	REFLECTANCE
I	.0	.902+00
	24.0	.810+00
I	.0	.913+00
	24.0	.861+00
I	.0	.901+00
	240.0	.823+00
I	.0	.933+00
	240.0	.883+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

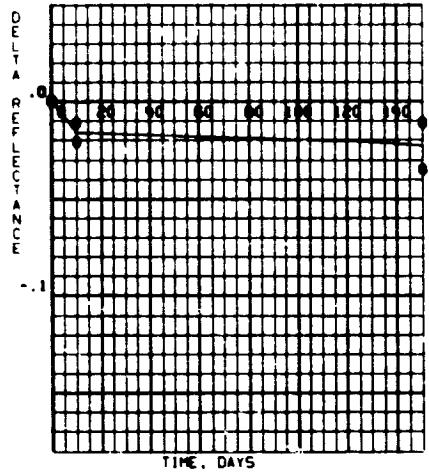
F	DEG R	DEG K	REFLECTANCE
I	-	-	.901+00
	660.	367.	.823+00
I	-	-	.933+00
	660.	367.	.883+00
I	-	-	.905+00
	530.	294.	.892+00
I	-	-	.844+00
	530.	294.	.894+00
I	-	-	.896+00
	140.	78.	.882+00
I	-	-	.914+00
	140.	78.	.882+00
I	-	-	.905+00
	37.	21.	.883+00
I	-	-	.906+00
	37.	21.	.888+00

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	REFLECTANCE
I	.0	.868+00
	24.0	.899+00
I	.0	.875+00
	24.0	.901+00
I	.0	.906+00
	72.0	.854+00
I	.0	.906+00
	72.0	.791+00
I	.0	.906+00
	240.0	.872+00
I	.0	.905+00
	240.0	.880+00

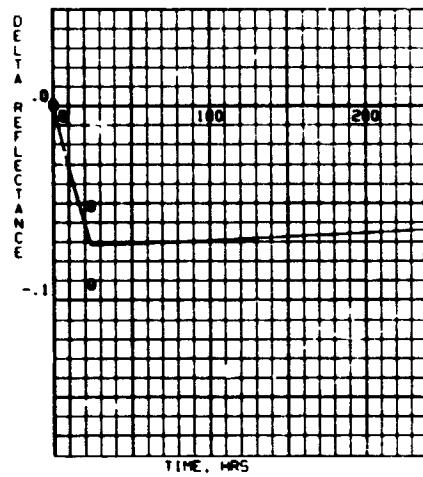
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED MYLAR, 1/4 MIL

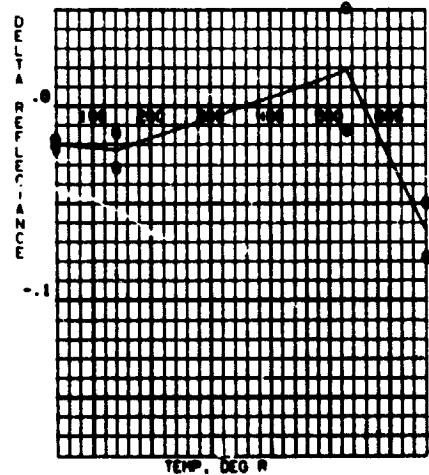


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

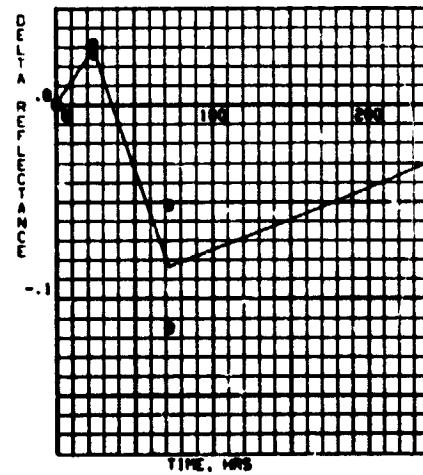
PROPERTY- DELTA REFLECTANCE



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY - REFLECTANCE

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.908+00
	12.0	.883+00
	.0	.906+00
	12.0	.871+00
	.0	.908+00
	24.0	.890+00
	.0	.907+00
	24.0	.887+00
	.0	.901+00
	72.0	.888+00
	.0	.900+00
	72.0	.845+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.930+00
	12.0	.887+00
	.0	.917+00
	12.0	.876+00
	.0	.902+00
	24.0	.887+00
	.0	.899+00
	24.0	.719+00
	.0	.925+00
	72.0	SAMPLE DESTROYED
	.0	.927+00
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

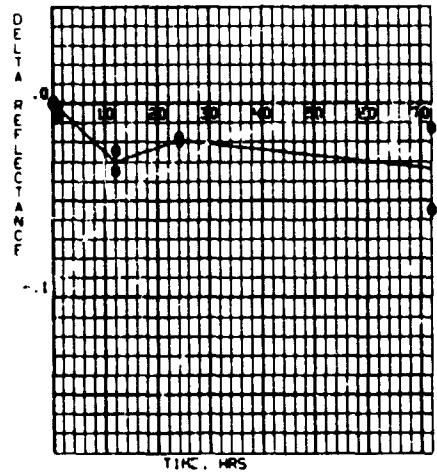
F	HOURS	REFLECTANCE
	.0	.933+00
	.5	.881+00
	.0	.924+00
	.5	.879+00
	.0	.926+00
	2.0	.886+00
	.0	.929+00
	2.0	.886+00
	.0	.927+00
	24.0	.884+00
	.0	.925+00
	24.0	.881+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
	.0	.927+00
	4.2	.897+00
	.0	.928+00
	4.2	.898+00
	.0	.929+00
	150.0	.848+00
	.0	.930+00
	150.0	.781+00

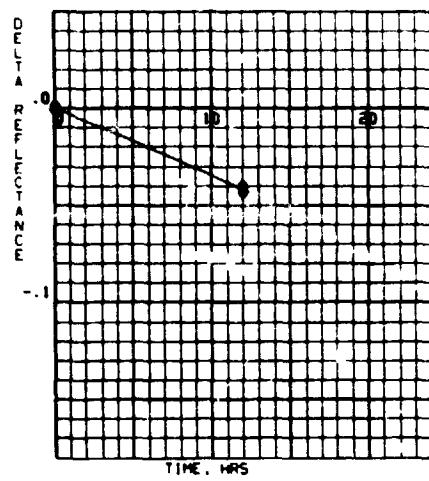
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED MYLAR, 1/4 MIL

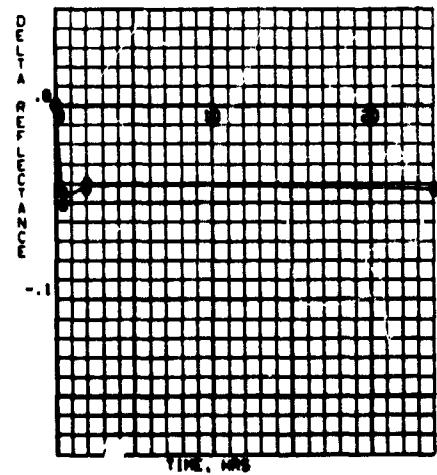


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

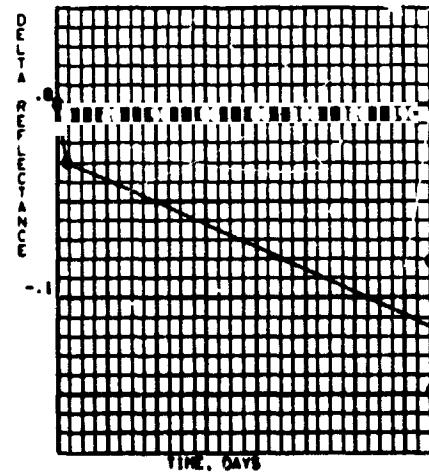
PROPERTY- DELTA REFLECTANCE



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8C1
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY - REFLECTANCE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
I	.0	.920+00
	4.2	.862+00
I	.0	.934+00
	4.2	.854+00
I	.0	.866+00
	150.0	.849+00
I	.0	.901+00
	150.0	.860+00

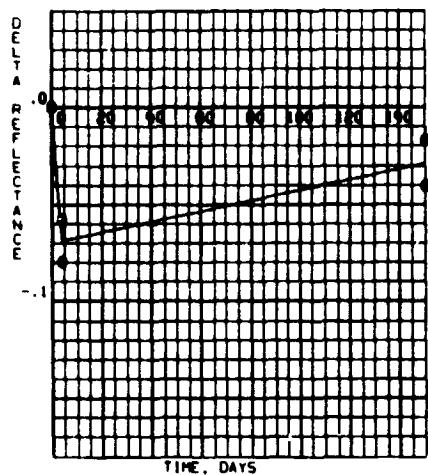
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	REFLECTANCE
I		.000		.896+00
		.100-02		.870+00
I		.000		.932+00
		.100-02		.867+00
I		.000		.873+00
		.760+03	SAMPLE DESTROYED	
I		.000		.873+00
		.760+03	SAMPLE DESTROYED	

NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY- DELTA REFLECTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Single Aluminized Mylar, S-A-M

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESSION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0
			660 (366)	240	0
			530 (294)	240	0
			140 (78)	240	0
			37 (21)	240	0
3	200°F (93°C) 40% R.H.			24	0
				72	0
				240	0
5	95% R.H. at 95°F (35°C)			12	0
				24	0
				72	0
6	95% R.H./Salt Air at 95°F(35°C)			12	0
				24	0/5**
				72	Coating removed by environment.
7	Water Immersion at 70°F (21°C)			0.5	0
				2	0
				24	0
8e, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}		100	0
				3600	0
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}		100	0
				3600	0
8e, h	95% R.H./F ₂ at 95°F (35°C)	10^{-3}		4	0
				760	Destroyed in environment.

* See Table 5 for complete identification of test material (Volume I).

** Two specimens.

FLEXIBILITY TEST RESULTS

Material*: Single Aluminized Mylar, S-A-M

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R (°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press Torr	660 (366)	24	✓		
			660 (366)	240	✓		
			530 (294)	240	✓		
			140 (78)	240	✓		
			31 (21)	240			
				24	✓		
3	200°F (93°C) 40% R.H.			72	✓		
				240	✓		
5	95% R.H. at 95°F (35°C)			12	✓		
				24	✓		
				72	✓		
6	95% R.H./Salt Air at 95°F (35°C)			12	✓		
				24	✓		
				72	Coating Removed by Environment		
7	Water Immersion at 70°F (21°C)			0.5	✓		
				2	✓		
				24	✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³		100	✓		
				3600	✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³		100	✓		
				3600	✓		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³		4	Destroyed in environment.		
				760			

* See Table 5 for complete identification of test material (Volume I)

** As compared to control samples

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SINGLE ALUMINIZED MYLAR

ENVIRONMENT 2B

VACUUM = 10^{-6} TORR, 660 DEG.R (365 DEG.K)

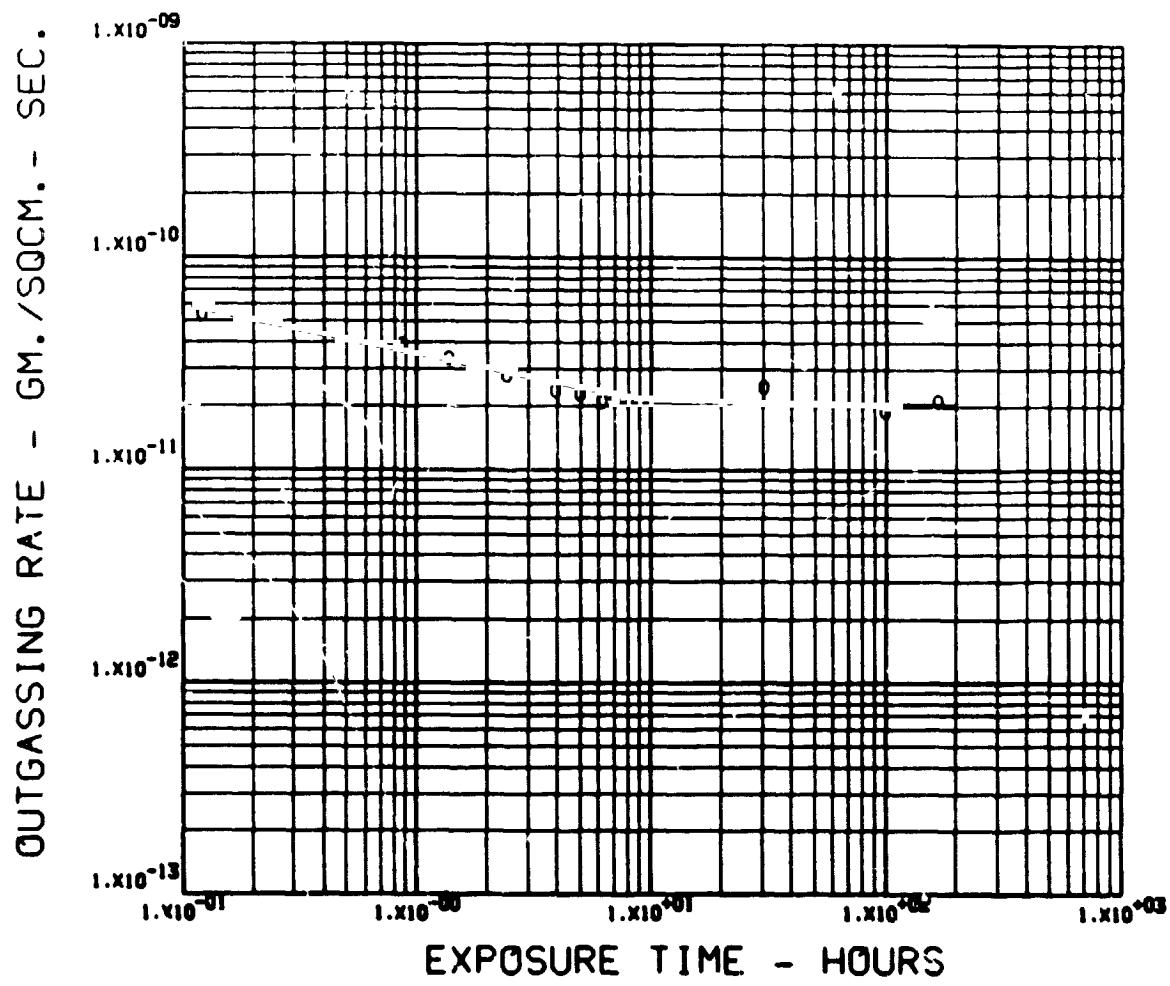
TEST DATE 041971

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .1840 GMS. SAMPLE AREA = 387. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.12	5.36-11	.55	.35	.10
.65	3.88-11	.57	.21	.21
1.35	3.31-11	.67	.17	.16
2.42	2.79-11	.71	.22	.06
3.69	2.33-11	.82	.14	.04
4.92	2.26-11	.86	.11	.03
6.14	2.09-11	.86	.10	.03
6.92	2.16-11	.85	.11	.04
30.17	2.44-11	.79	.16	.04
99.50	1.88-11	.83	.12	.05
165.59	2.09-11	.88	.08	.04

PROPERTY - OUTGASSING
MATERIAL - SINGLE ALUMINIZED MYLAR



ENVIRONMENT 2B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE ALUMINIZED MYLAR

ENVIRONMENT 2C

VACUUM-1UE-06 TORR, 530 DFG.R (295 DEG.K)

TEST DATE 012671

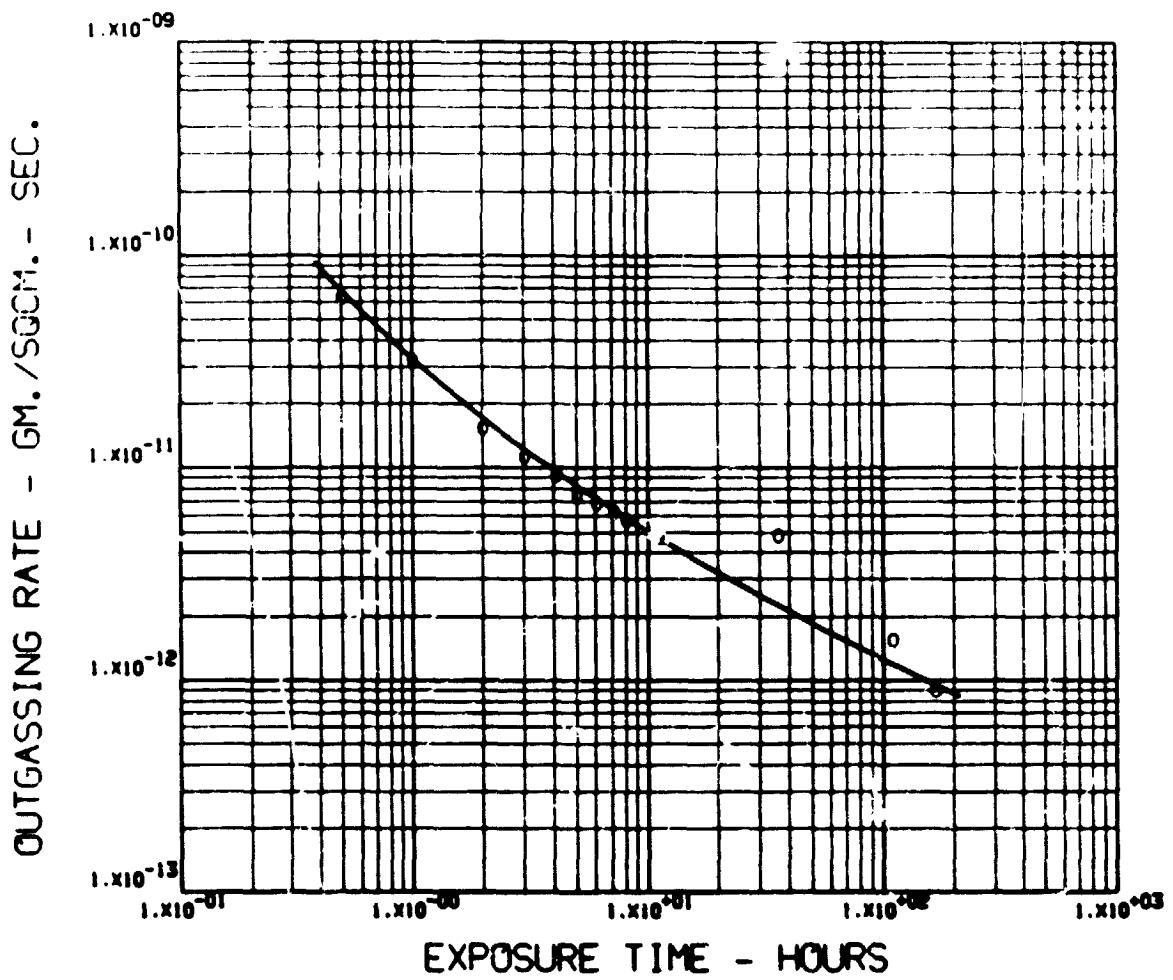
TEST CHAMBER NO. 2

SAMPLE WEIGHT = .1778 GMS. SAMPLE AREA = 373. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.50	6.29-11	.73	.22	.05
1.00	3.16-11	.57	.33	.10
2.00	1.51-11	.55	.35	.11
3.00	1.11-11	.46	.42	.12
4.08	9.17-12	.52	.39	.10
5.00	7.38-12	.50	.39	.11
6.08	6.74-12	.49	.40	.11
7.08	6.19-12	.50	.39	.11
8.08	5.63-12	.46	.45	.10
11.08	4.65-12	.48	.42	.10
35.86	4.74-12	.33	.55	.12
111.08	1.54-12	.48	.48	.05
167.89	8.63-13	.43	.51	.06

PROPERTY - OUTGASSING

MATERIAL - SINGLE ALUMINIZED MYLAR



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE ALUMINIZED MYLAR

ENVIRONMENT 4A

VACUUM, 10E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

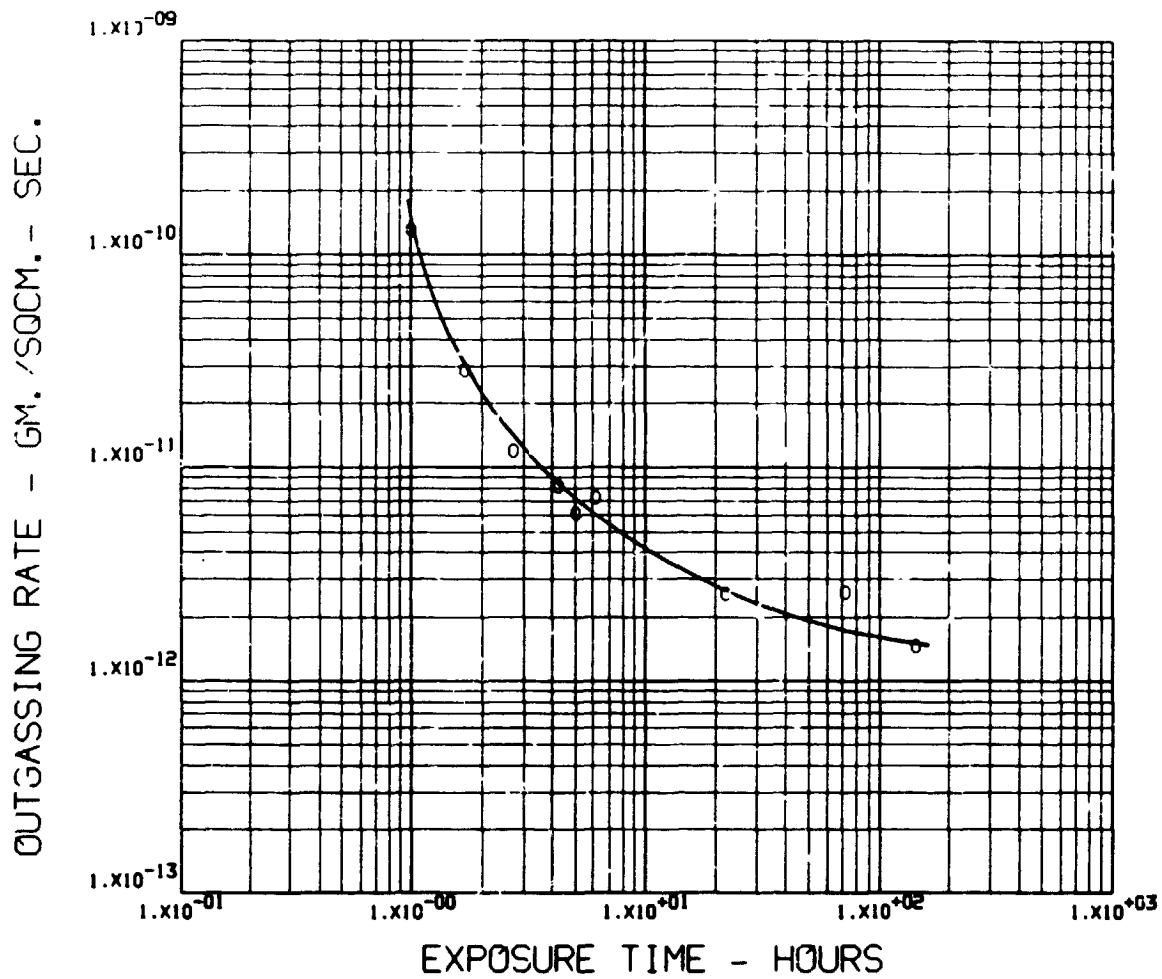
TEST DATE 052372

TEST CHAMBER NO. 2

SAMPLE WEIGHT = .8420 GMS. SAMPLE AREA = 1763. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.00	1.30-10	.22	.01	.78
1.67	2.87-11	.20	.00	.79
2.67	1.19-11	.31	.00	.69
4.17	8.17-12	.39	.00	.61
5.00	6.12-12	.62	.00	.38
6.17	7.23-12	.23	.00	.77
22.00	2.55-12	.47	.00	.53
71.17	2.59-12	.54	.00	.46
142.42	1.44-12	.73	.01	.27

PROPERTY - OUTGASSING
MATERIAL SINGLE ALUMINIZED MYLAR



ENVIRONMENT 4A VACUUM, 10^{-6} TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR
MATERIAL - SINGLE ALUMINIZED MYLAR

ENVIRONMENT 4B

VACUUM, 10⁻⁶ TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

TEST DATE 092071

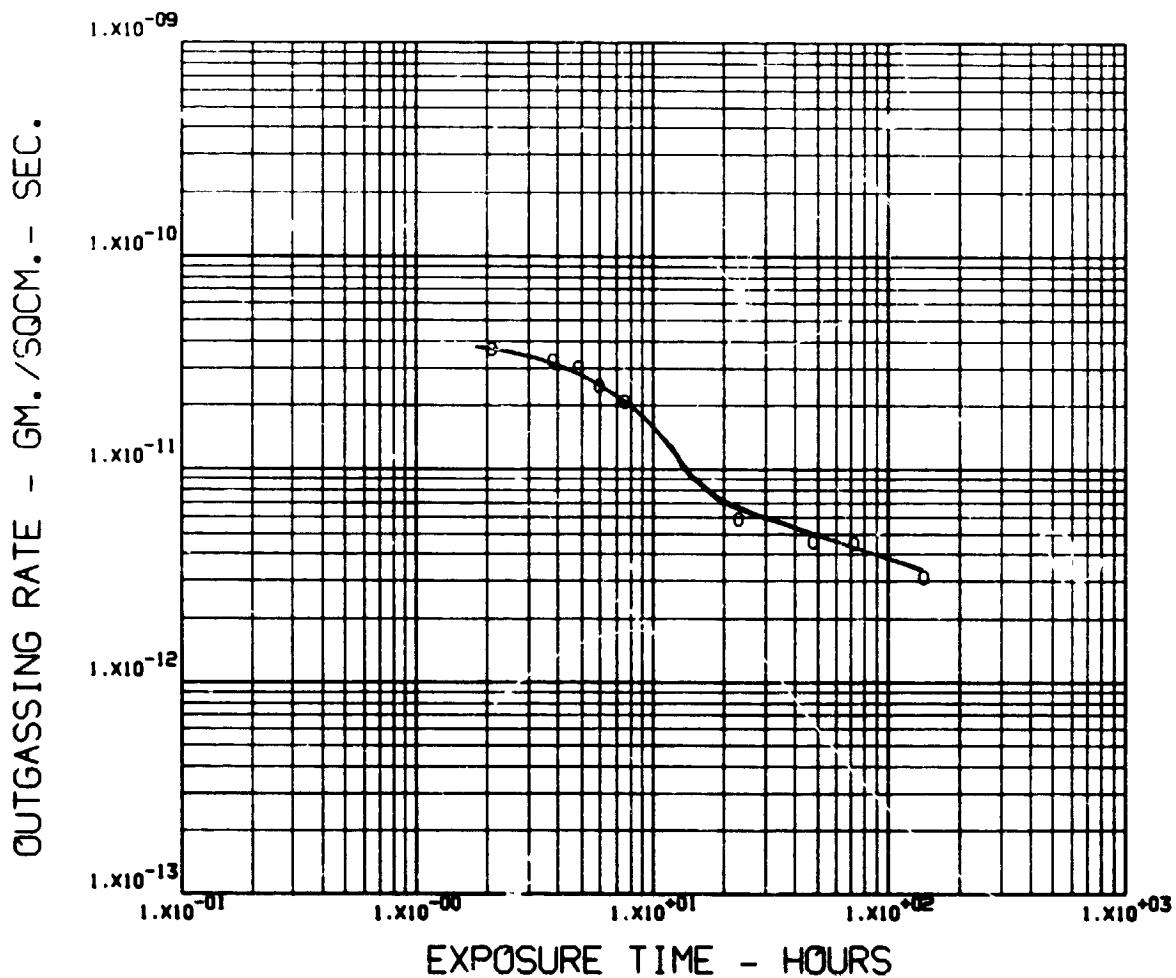
TEST CHAMBER NO. 1

SAMPLE WEIGHT = .3500 GMS. SAMPLE AREA = 736. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.08	3.65-11	.03	.13	.84
3.75	3.22-11	.08	.45	.47
4.83	2.97-11	.08	.49	.43
5.93	2.46-11	.08	.43	.49
7.48	2.07-11	.09	.43	.48
22.75	5.81-12	.14	.38	.48
47.58	4.54-12	.14	.36	.50
71.33	4.46-12	.09	.40	.51
141.50	3.11-12	.08	.38	.54

PROPERTY - OUTGASSING

MATERIAL - SINGLE ALUMINIZED MYLAR



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGAS SING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.25370+00
I	10.0	.25330+00
I	.0	.24510+00
I	10.0	.24500+00
I	.0	.25530+00
I	150.0	.25550+00
I	.0	.25640+00
I	150.0	.25650+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.25650+00
I	240.0	.25530+00
I	.0	.25320+00
I	240.0	.25140+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.25650+00
I	660.	367.	.25530+00
I	-	-	.25320+00
I	660.	367.	.25140+00
I	-	-	.25340+00
I	530.	294.	.25340+00
I	-	-	.25350+00
I	530.	294.	.25300+00
I	-	-	.25260+00
I	140.	78.	.25320+00
I	-	-	.25430+00
I	140.	78.	.25500+00
I	-	-	.25300+00
I	37.	21.	.25250+00
I	-	-	.26050+00
I	37.	21.	.26000+00

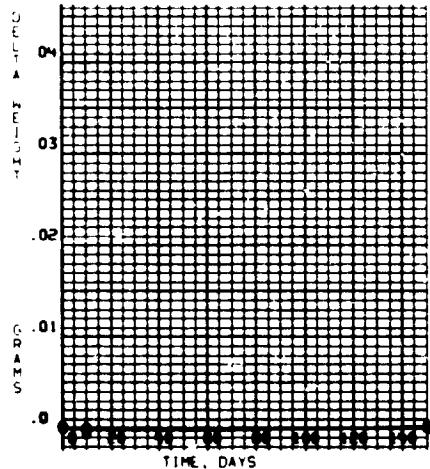
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.25180+00
I	240.0	.25020+00
I	.0	.25000+00
I	240.0	.24750+00

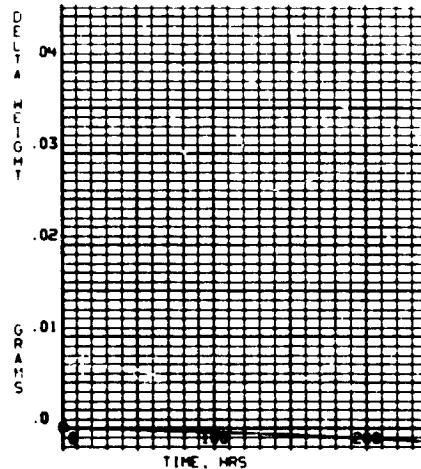
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

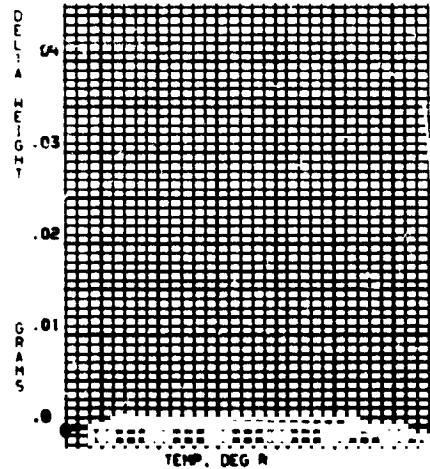
PROPERTY - DELTA WEIGHT



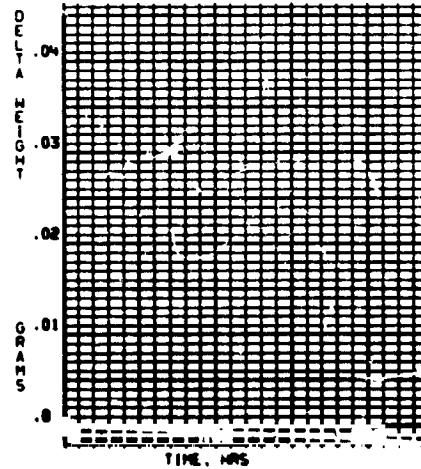
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) NO PERCENT R.H.

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.25820+00
	12.0	.25820+00
	.0	.25150+00
	12.0	.25150+00
	.0	.25070+00
	24.0	.25040+00
	.0	.25320+00
	24.0	.25250+00
	.0	.24350+00
	72.0	.24250+00
	.0	.25950+00
	72.0	.25900+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.25850+00
	12.0	.27750+00
	.0	.24290+00
	12.0	.25900+00
	.0	.24290+00
	24.0	.26650+00
	.0	.25220+00
	24.0	.29850+00
	.0	.25640+00
	72.0	.30000+00
	.0	.24350+00
	72.0	.27550+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

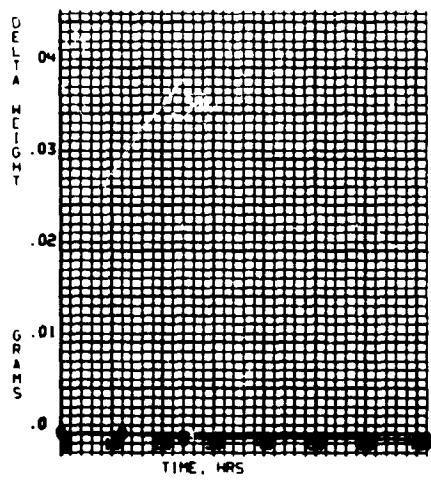
F	HOURS	GRAMS
	.0	.25000+00
	.5	.25000+00
	.0	.24500+00
	.5	.24470+00
	.0	.25920+00
	2.0	.25940+00
	.0	.25200+00
	2.0	.25210+00
	.0	.24350+00
	24.0	.24580+00
	.0	.25200+00
	24.0	.26180+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.24650+00
	150.0	.24600+00
	.0	.24260+00
	150.0	.24350+00

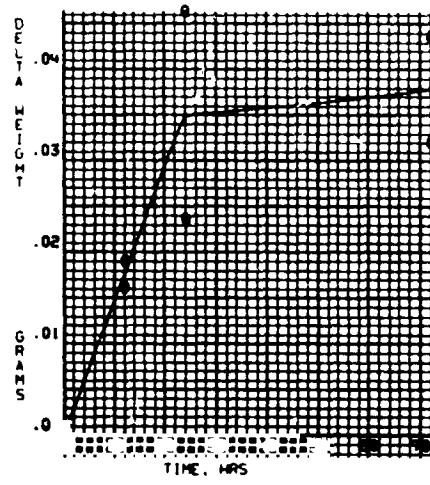
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

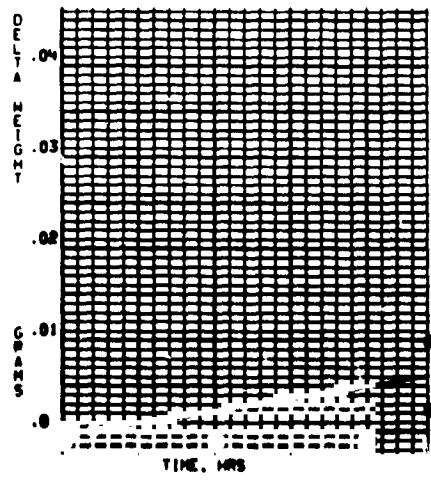


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

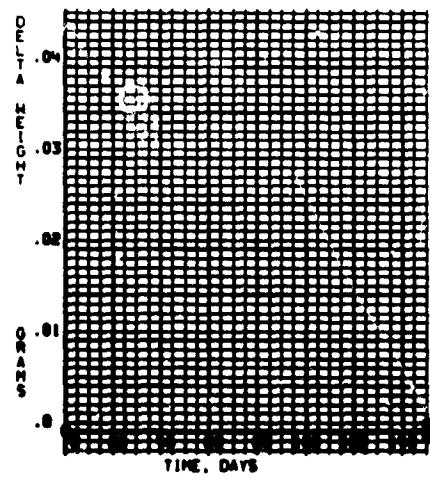
PROPERTY - DELTA WEIGHT



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - DOUBLE ALUMINIZED MYLAR. 1/4 MIL
PROPERTY - WEIGHT

ENVIRONMENT 8 (EF'
GASFOLIUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C).4 HP

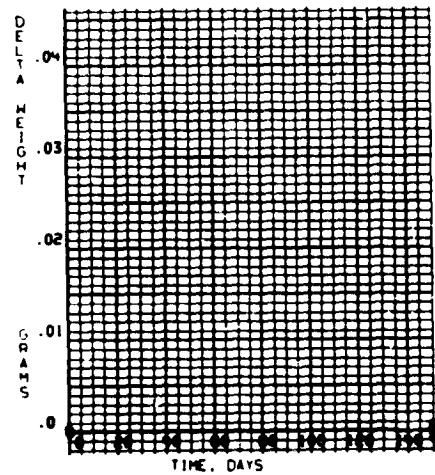
F	DAYS	GRAMS	F	F	P.P.	TORR	GRAMS
I	.0	.25750+00	I	.000		.24180+00	
	150.0	.25680+00		.100-02		.24200+00	
I	.0	.25780+00	I	.000		.25310+00	
	150.0	.25830+00		.100-02		.25300+00	
			I	.000		.25320+00	
				.760+03		.265.0+00	
			I	.000		.25420+00	
				.760+03		.26700+00	

NOTE.

- .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
- .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
- .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
- .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

PROPER 1 - DELTA WEIGHT



ENVIRONMENT 8(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DEG	LB/IN	N/M
	.0	.366+01	.641+03
	.0	.364+01	.638+03
	10.0	.392+01	.687+03
	10.0	.384+01	.673+03
	150.0	.392+01	.687+03
	150.0	.412+01	.722+03

ENVIRONMENT 2 (AH)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	LB/IN	N/M
	240.0	.456+01	.799+03
	240.0	.426+01	.746+03

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

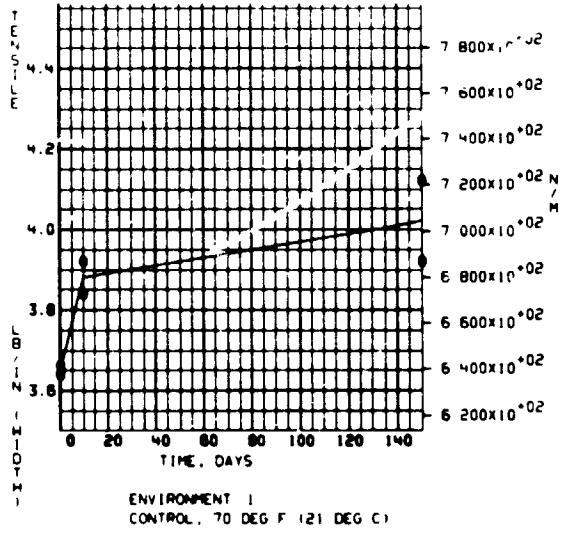
F	DEG R	DEG K	LB/IN	N/M
660.	367.	.456+01	.799+03	
660.	367.	.426+01	.746+03	
530.	294.	.408+01	.715+03	
530.	294.	.404+01	.708+03	
140.	78.	.412+01	.722+03	
140.	78.	.384+01	.673+03	
37.	21.	.352+01	.617+03	
37.	21.	.366+01	.641+03	

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

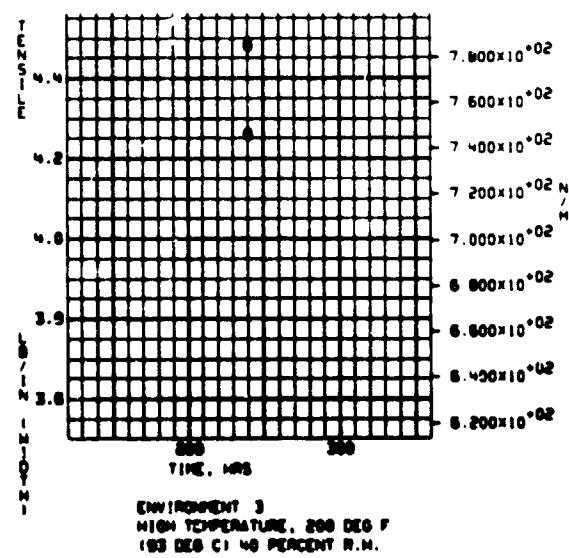
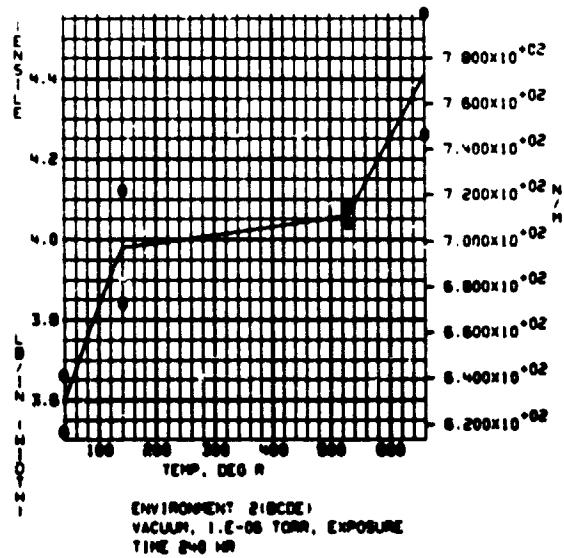
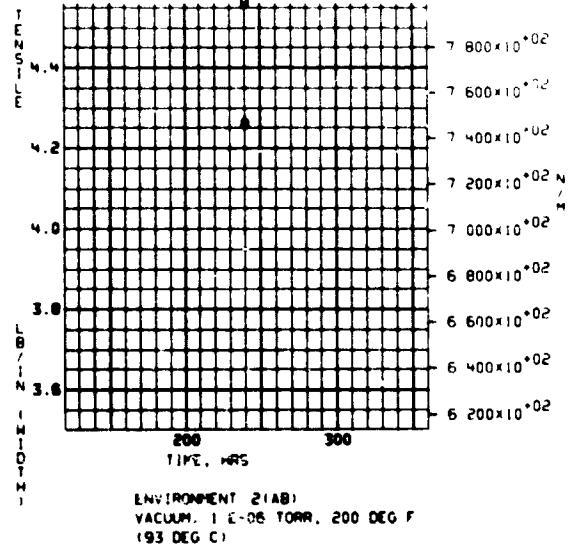
F	HOURS	LB/IN	N/M
	240.0	.426+01	.746+03
	240.0	.448+01	.785+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL



PROPERTY TENSILE



MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.410+01	.718+03
	12.0	.400+01	.701+03
	24.0	.360+01	.631+03
	24.0	.368+01	.645+03
	72.0	.364+01	.638+03
	72.0	.380+01	.666+03

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.376+01	.659+03
	12.0	.366+01	.641+03
	24.0	.364+01	.638+03
	24.0	.350+01	.613+03
	72.0	.360+01	.631+03
	72.0	.366+01	.641+03

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

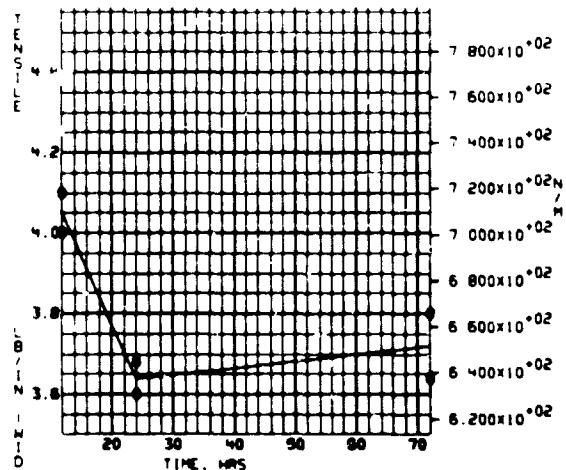
F	HOURS	LB/IN	N/M
	.5	.368+01	.645+03
	.5	.360+01	.631+03
	2.0	.394+01	.690+03
	2.0	.404+01	.708+03
	24.0	.370+01	.648+03
	24.0	.382+01	.669+03

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M
	150.0	.374+01	.655+03
	150.0	.414+01	.725+03

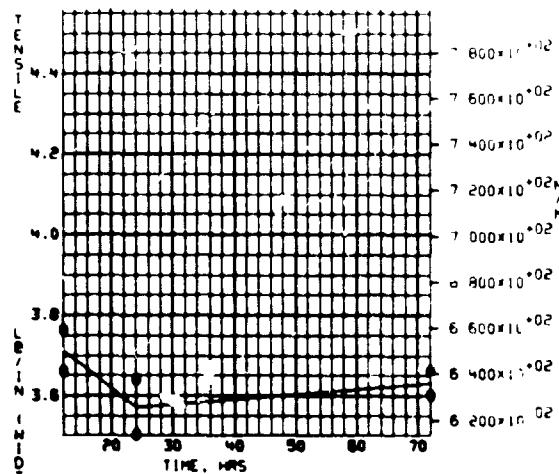
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

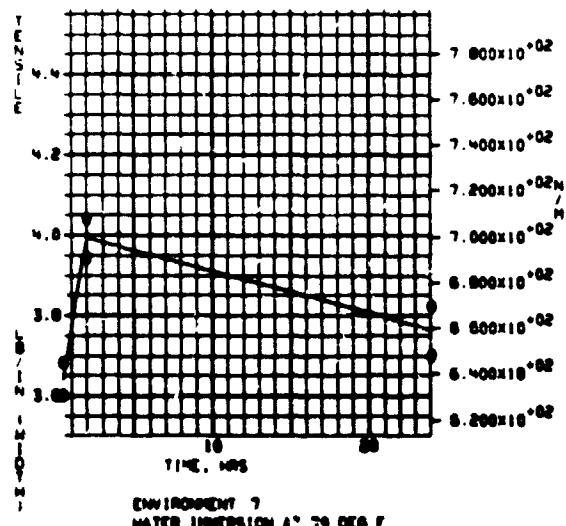


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

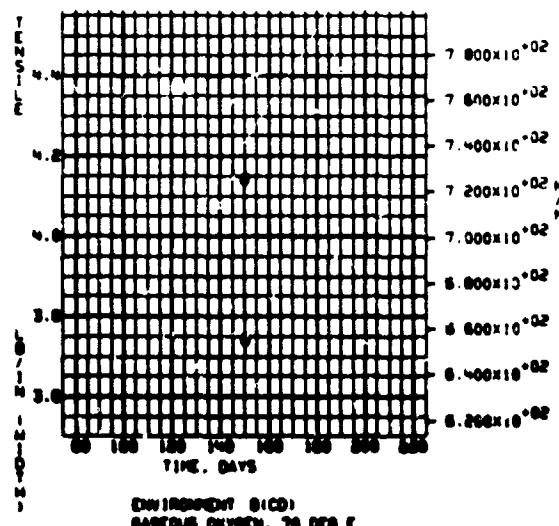
PROPERTY - TENSILE



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION A° 70 DEG F
(18.3 DEG C)



ENVIRONMENT 8(CD)
GASEOUS CHLORIDE, 70 DEG F
(18.3 DEG C) 1.E-03 TORR

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY - TENSILE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) -03 TORR

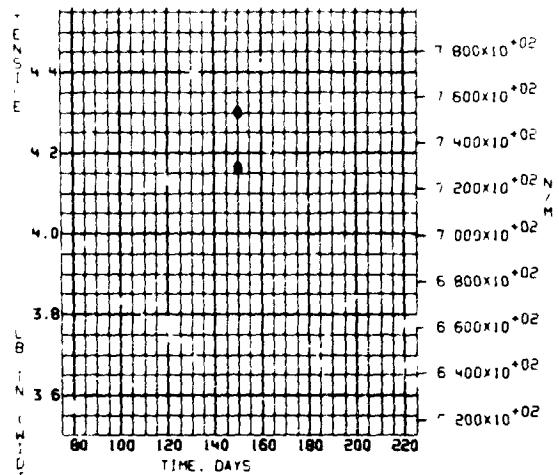
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	DAYS	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
	150.0	.430+01	.753+03			.100-02		.376+01	.659+03
	150.0	.416+01	.729+03			.100-02		.360+01	.631+03
						.760+03		.226+01	.396+03
						.760+03		.282+01	.494+03

NOTE.
.SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL: DOUBLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY: TENSILE



ENVIRONMENT: B(FF)
GASEOUS FLUORINE, 70 DEG F
12. DEC CI 1 E-03 TORR

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE (SIDE L)

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
	.0	.290-01
	10.0	.280-01
	.0	.300-01
	10.0	.300-01
	.0	.240-01
	150.0	.370-01
	.0	.270-01
	150.0	.380-01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	EMITTANCE
	.0	.280-01
	240.0	.300-01
	.0	.21-01
	240.0	.310-01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

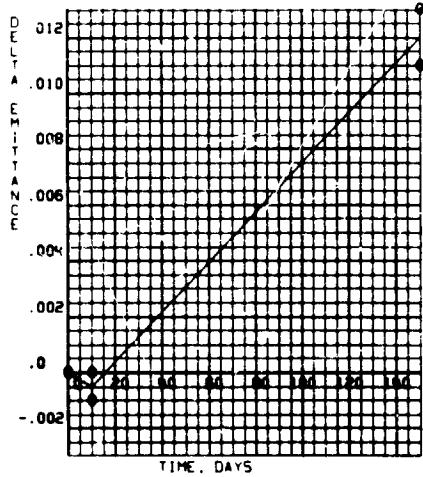
F	DEG R	DEG K	EMITTANCE
	-	-	.280-01
	660.	367.	.300-01
	-	-	.290-01
	660.	367.	.310-01
	-	-	.280-01
	530.	294.	.310-01
	-	-	.280-01
	530.	294.	.290-01
	-	-	.270-01
	140.	78.	.290-01
	-	-	.280-01
	140.	78.	.290-01
	-	-	.270-01
	37.	21.	.300-01
	-	-	.260-01
	37.	21.	.290-01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
	.0	.300-01
	240.0	.320-01
	.0	.290-01
	240.0	.340-01

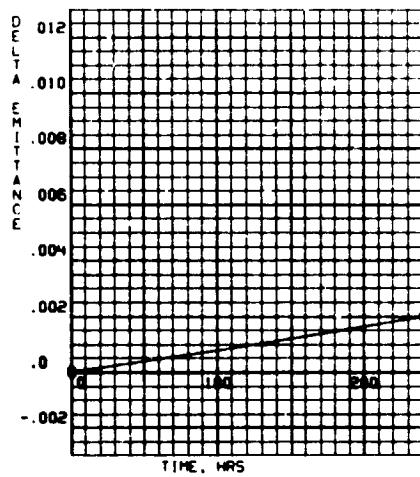
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

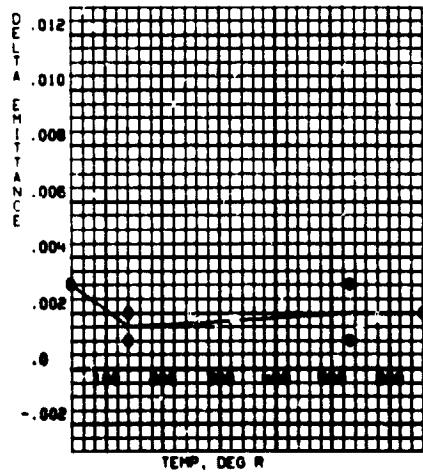


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

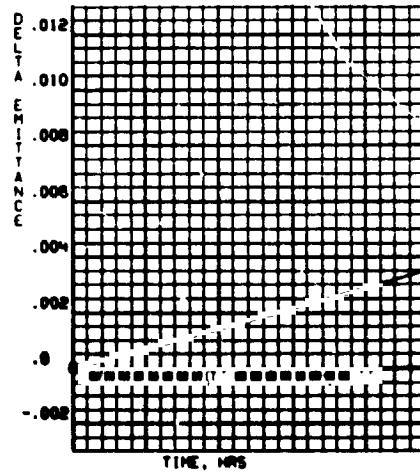
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(COE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -EMITTANCE (STDE I)

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.270-01
	12.0	.240-01
I	.0	.280-01
	12.0	.260-01
I	.0	.280-01
	24.0	.280-01
I	.0	.270-01
	24.0	.250-01
I	.0	.300-01
	72.0	.320-01
I	.0	.270-01
	72.0	.270-01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.270-01
	12.0	.310-01
I	.0	.290-01
	12.0	.320-01
I	.0	.290-01
	24.0	.320-01
I	.0	.280-01
	24.0	.320-01
I	.0	.280-01
	72.0	SAMPLE DESTROYED
I	.0	.290-01
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	EMITTANCE
I	.0	.270-01
	.5	.300-01
I	.0	.290-01
	.5	.300-01
I	.0	.280-01
	2.0	.280-01
I	.0	.270-01
	2.0	.300-01
I	.0	.290-01
	24.0	.370-01
I	.0	.270-01
	24.0	.300-01

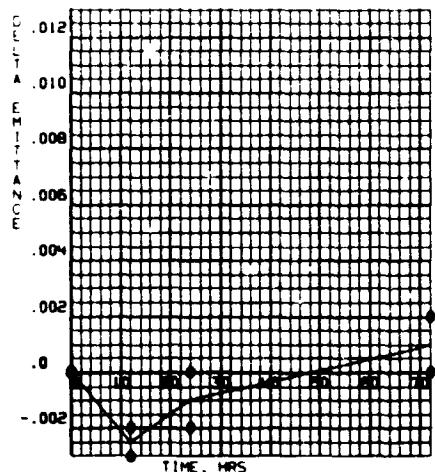
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.270-01
	150.0	.370-01
I	.0	.280-01
	150.0	.300-01

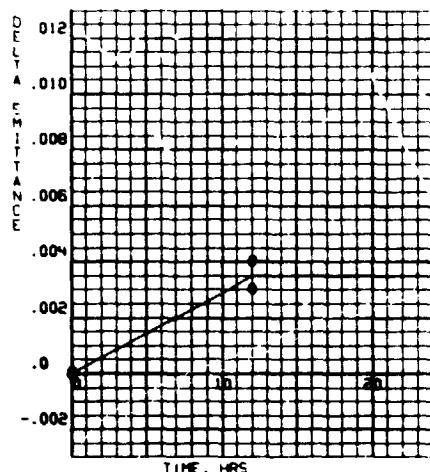
NOTE,
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- DOUBLE ALUMINIZED MYLAR, 1/4 MIL

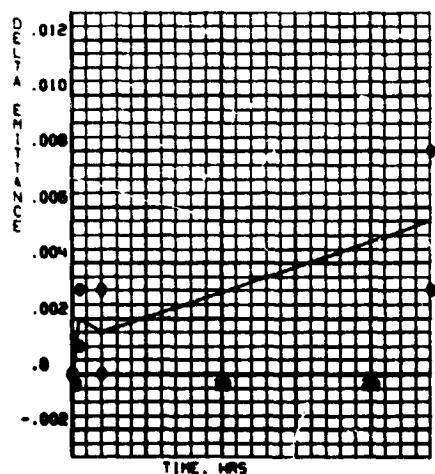
PROPERTY- DELTA EMITTANCE



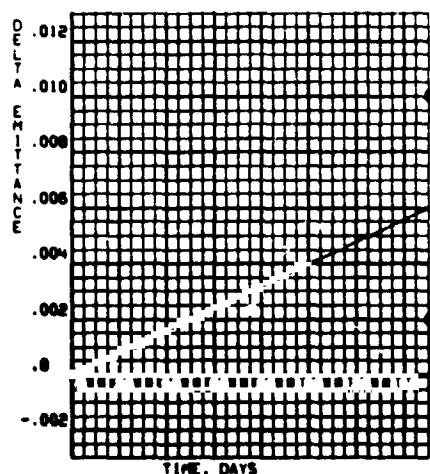
ENVIRONMENT 5
95 PERCENT R H 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R H /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
DABEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE (SIDE L)

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

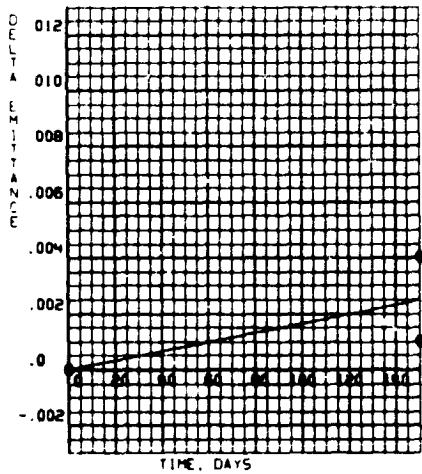
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	DAYS	EMITTANCE	F	F	P.P. TORK	EMITTANCE
I	.0	.270-01	I	.000		.300-01
	150.0	.280-01		.100-02		.350-01
I	.0	.270-01	I	.000		.270-01
	150.0	.310-01		.100-02		.470-01
			I	.000		.280-01
				.760+03		.560-01
			I	.000		.280-01
				.760+03		.650-01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

PROPERTY - DELTA EMITTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
 PROPERTY -EMITTANCE (SIDE O)

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
	.0	.390-01
	10.0	.390-01
	.0	.420-01
	10.0	.410-01
	.0	.360-01
	150.0	.530-01
	.0	.390-01
	150.0	.510-01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	EMITTANCE
	.0	.400-01
	240.0	.420-01
	.0	.410-01
	240.0	.470-01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

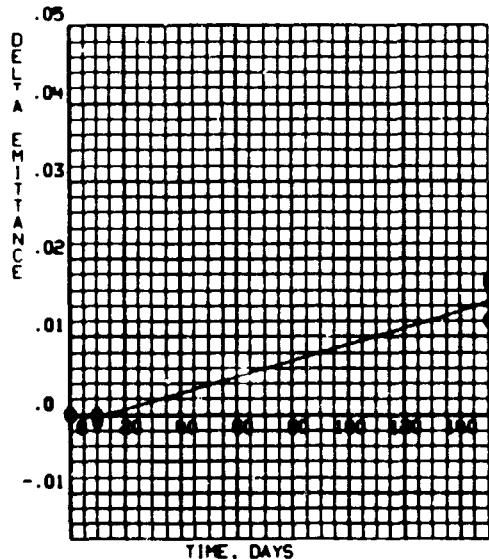
F	DEG R	DEG K	EMITTANCE
	-	-	.400-01
	660.	367.	.420-01
	-	-	.410-01
	660.	367.	.470-01
	-	-	.400-01
	530.	294.	.410-01
	-	-	.420-01
	530.	294.	.420-01
	-	-	.390-01
	140.	78.	.410-01
	-	-	.400-01
	140.	78.	.420-01
	-	-	.400-01
	37.	21.	.430-01
	-	-	.380-01
	37.	21.	.430-01

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
	.0	.400-01
	240.0	.480-01
	.0	.400-01
	240.0	.450-01

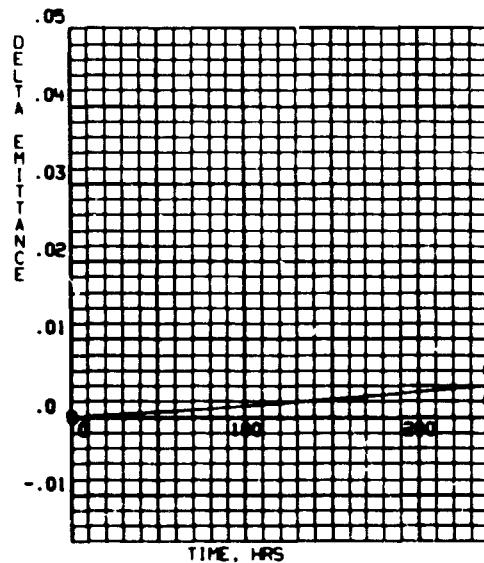
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

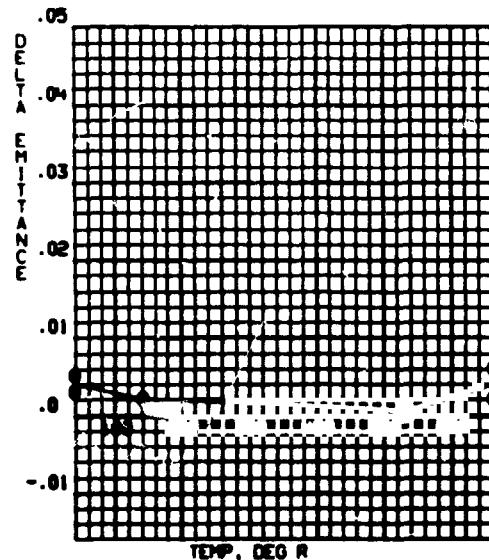


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

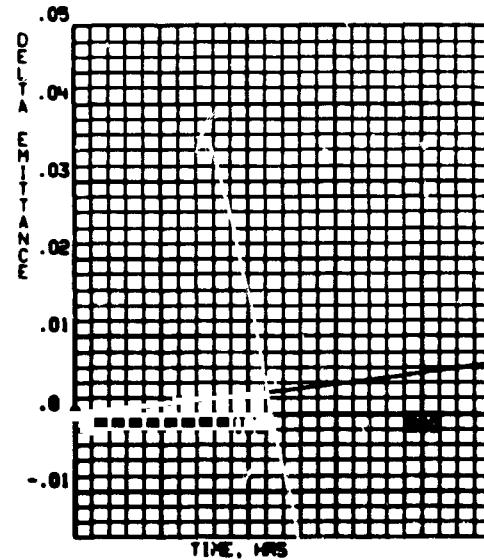
PROPERTY DELTA EMISSANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) NO PLURONIC R.M.

MATERIAL -DOUBLE ALUMINIZED MYLAR. 1/4 MIL
PROPERTY -EMITTANCE (SIDE O)

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	EMITTANCE
I	.0	.390-01
	12.0	.340-01
I	.0	.390-01
	12.0	.360-01
I	.0	.420-01
	24.0	.420-01
I	.0	.380-01
	24.0	.370-01
I	.0	.390-01
	72.0	.890-01
I	.0	.390-01
	72.0	.470-01

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.390-01
	12.0	.450-01
I	.0	.400-01
	12.0	.430-01
I	.0	.400-01
	24.0	.240-01
I	.0	.390-01
	24.0	.410-01
I	.0	.390-01
	72.0	SAMPLE DESTROYED
I	.0	.380-01
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	EMITTANCE
I	.0	.380-01
	.5	.440-01
I	.0	.390-01
	.5	.430-01
I	.0	.390-01
	2.0	.440-01
I	.0	.390-01
	2.0	.420-01
I	.0	.410-01
	24.0	.560-01
I	.0	.390-01
	24.0	.460-01

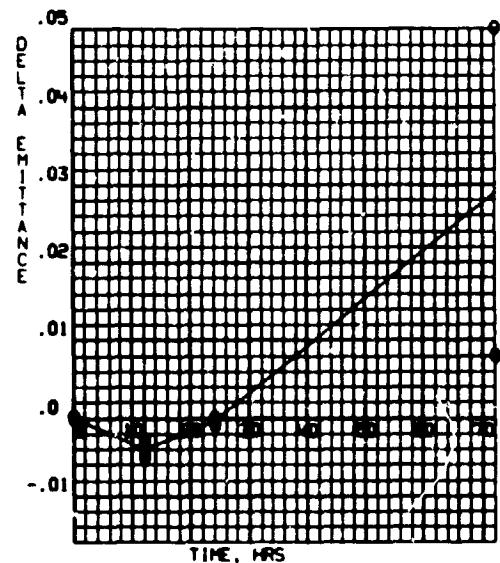
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.390-01
	150.0	.460-01
I	.0	.380-01
	150.0	.400-01

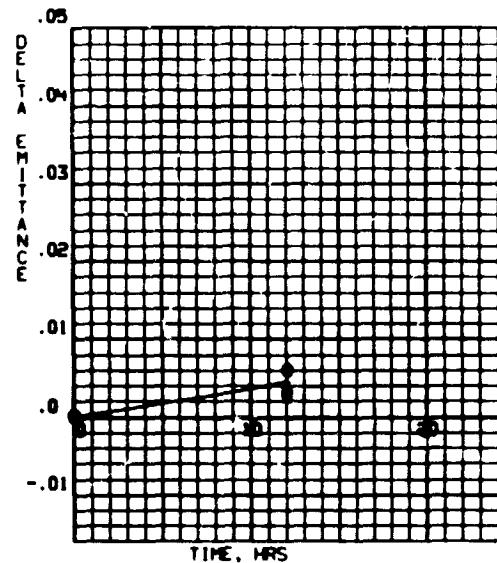
NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE ALUMINIZED MYLAR, 1/4 MIL

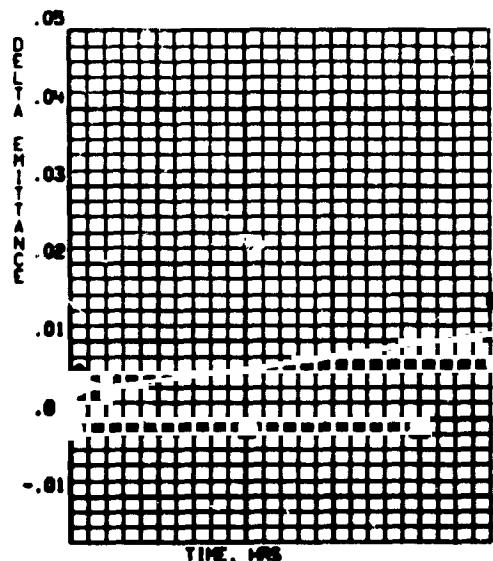
PROPERTY - DELTA EMITTANCE



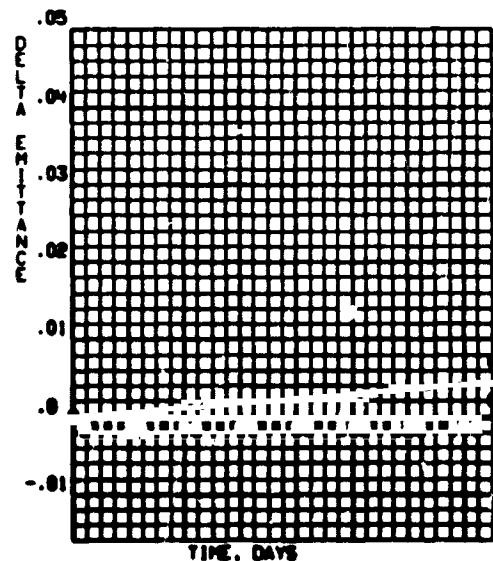
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO₂)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DOUBLE ALUMINIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE (SIDE O)

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

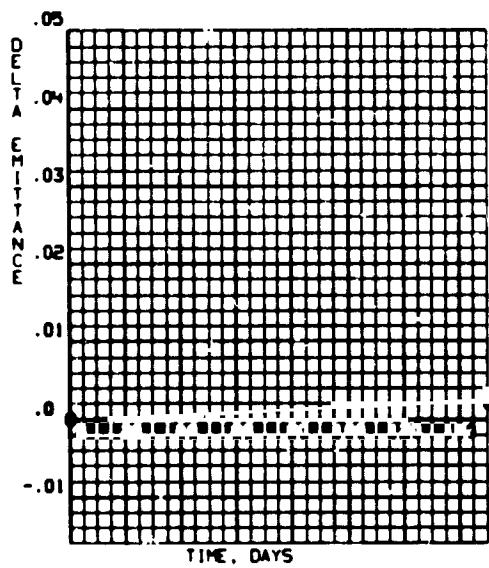
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HP

F	DAYS	EMITTANCE	F	F	P.P.	TORR	EMITTANCE
I	.0	.390-01	I	.000			.400-01
	150.0	.420-01		.100-02			.480-01
I	.0	.390-01	I	.000			.370-01
	150.0	.410-01		.100-02			.350-01
			I	.000			.380-01
				.760+03			.360-01
			I	.000			.380-01
				.760+03			.420-01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: COPPER ALUMINUM MELT (104 NM)

REFERENCE: C-10, ENV STAB



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Double Aluminized Mylar, D-A-M

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr		660 (366)	24	0
			660 (366)	240	
			530 (294)	240	
			140 (78)	240	
			37 (21)	240	
3	200°F (93°C) 40% R.H.		24		0
			72		
			240		
5	95% R.H. at 95°F (35°C)		12		0
			24		
			72		
6	95% R.H./Salt Air at 95°F(35°C)		12		0 0/0 0/1* Coatings removed by environment.
			24		
			72		
7	Water Immersion at 70°F (21°C)		0.5		0
			2		
			24		
8e, g	Gaseous Oxygen at 70°F (21°C)	10 ⁻³	100		0
		10 ⁻³	3600		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³	100		0
		10 ⁻³	3600		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³	4		0
		760	4		

*See Table 5 for complete identification of test material (Volume I).

**Two specimens, one measurement each side.

FLEXIBILITY TEST RESULTS

Material*: Double Aluminized Mylar, D-A-M

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R(°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press Torr	660 (366)	24			
			660 (366)	240	✓		
			530 (284)	240	✓		
			140 (78)	240	✓		
			37 (21)	240	✓		
				24			
3	200°F (93°C) 40% R.H.			72			
				240	✓		
				12	✓		
5	95% R.H. at 95°F (35°C)			24	✓		
				72	✓		
				12	✓		
6	95% R.H./Salt Air at 95°F(35°C)			24	✓		
				72	✓		
				12	✓		
7	Water Immersion at 70°F (21°C)			24	✓		
				0.5	✓		
				2	✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³		24	✓		
				100			
				3600	✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³		100			
				3600	✓		
				100			
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³		4	✓		
				760	✓		
				4	✓		

* See Table 5 for complete identification of test material(Volume I)

** As compared to control samples

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = DOUBLE ALUMINIZED MYLAR

ENVIRONMENT 2B

VACUUM, 10^{-6} TORR, 660 DEG.R (365 DEG.K)

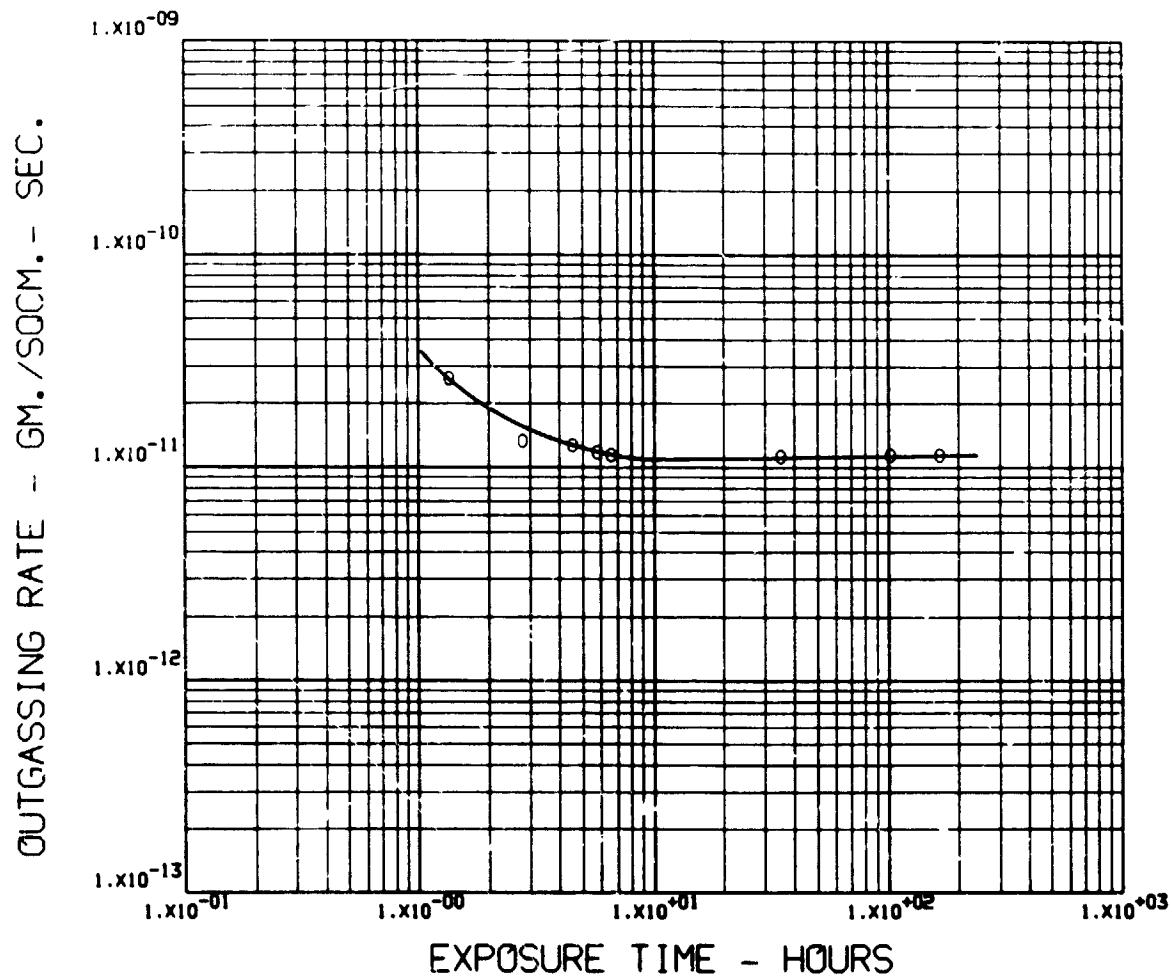
TEST DATE 032271

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .8390 GMS. SAMPLE AREA = 1937. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.35	2.60-11	.56	.26	.18
2.75	1.34-11	.84	.10	.06
4.50	1.26-11	.71	.19	.10
5.76	1.17-11	.89	.07	.04
6.58	1.15-11	.89	.07	.05
35.00	1.12-11	.91	.08	.01
102.21	1.13-11	.82	.10	.08
165.91	1.13-11	.82	.08	.09

PROPERTY - OUTGASSING
MATERIAL - DOUBLE ALUMINIZED MYLAR



ENVIRONMENT 2B VACUUM. 10-6 TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = DOUBLE ALUMINIZED MYLAR

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

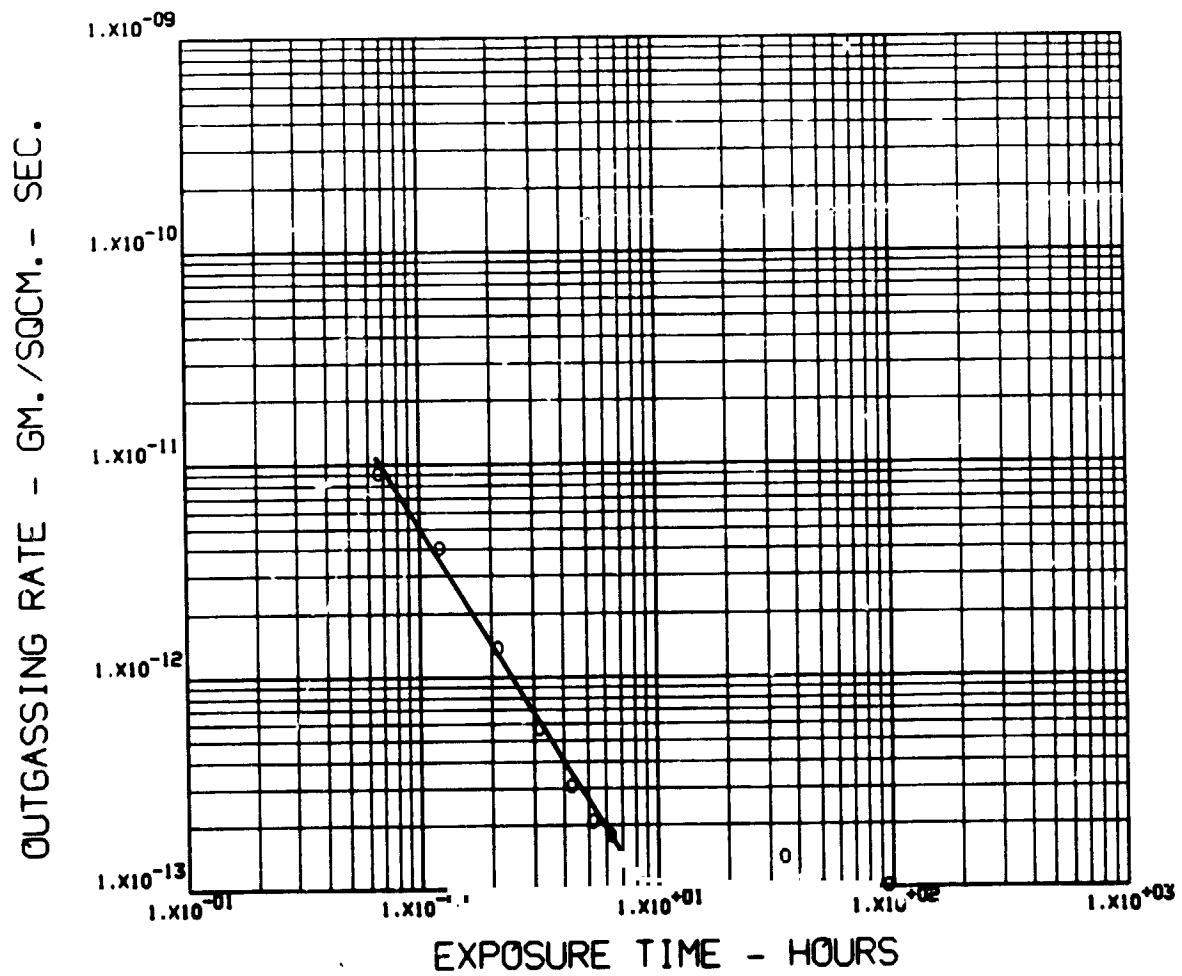
TEST DATE 012771

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .8900 GMS. SAMPLE AREA = 2055. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.67	9.08-12	.94	.06	.01
1.20	4.04-12	.92	.07	.01
2.19	1.36-12	.95	.04	.01
3.10	5.72-13	.83	.15	.02
4.28	3.03-13	.81	.17	.02
5.22	2.07-13	.78	.19	.02
6.23	1.77-13	.77	.20	.03
7.17	1.35-13	.77	.2	.03
34.37	1.39-13	.68	.2	.03
95.25	1.01-13	.67	.29	.04
166.50	9.68-14	.65	.31	.04

PROPERTY - OUTGASSING
MATERIAL - DOUBLE ALUMINIZED MYLAR



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DOUBLE ALUMINIZED MYLAR

ENVIRONMENT 4A

VACUUM. 10E-06 TORR. 660 DEG.R. (366 DEG.K) FOR 6HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR 4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

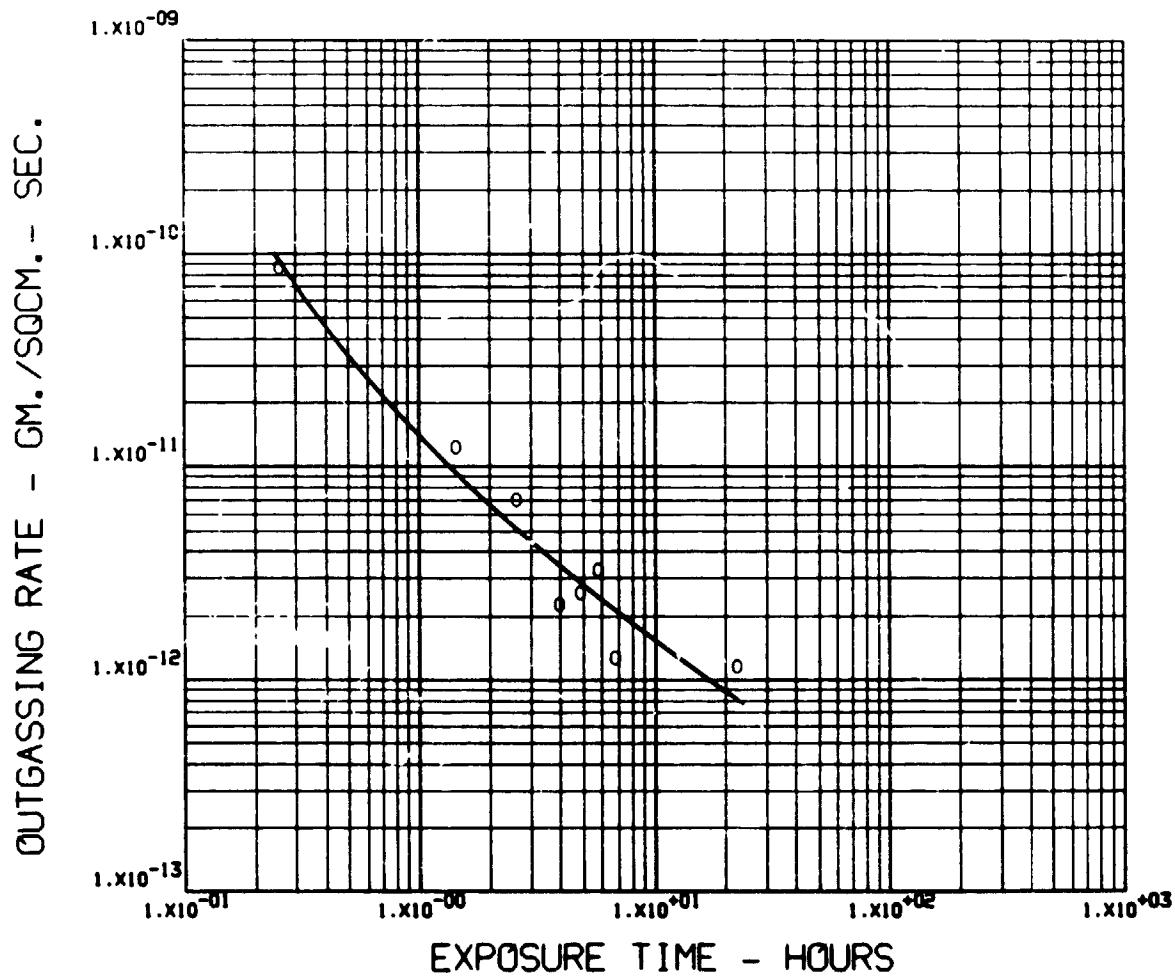
TEST DATE 05/15/72

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .8295 GMS. SAMPLE AREA = 1913. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.25	8.61-11	.30	.00	.70
1.42	1.24-11	.32	.00	.68
2.59	6.93-12	.85	.00	.15
3.92	2.23-12	.60	.00	.40
4.84	2.55-12	.77	.00	.23
5.75	3.25-12	.04	.00	.96
6.75	1.26-12	.04	.00	.96
22.34	1.14-12	.89	.00	.11
71.25	0.00	.84	.00	.16
146.67	0.00	.79	.00	.21

PROPERTY- OUTGASSING
MATERIAL- DOUBLE ALUMINIZED MYLAR



ENVIRONMENT 4A VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DOUBLE ALUMINIZED MYLAR

ENVIRONMENT 4B

VACUUM, 10^{-6} TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

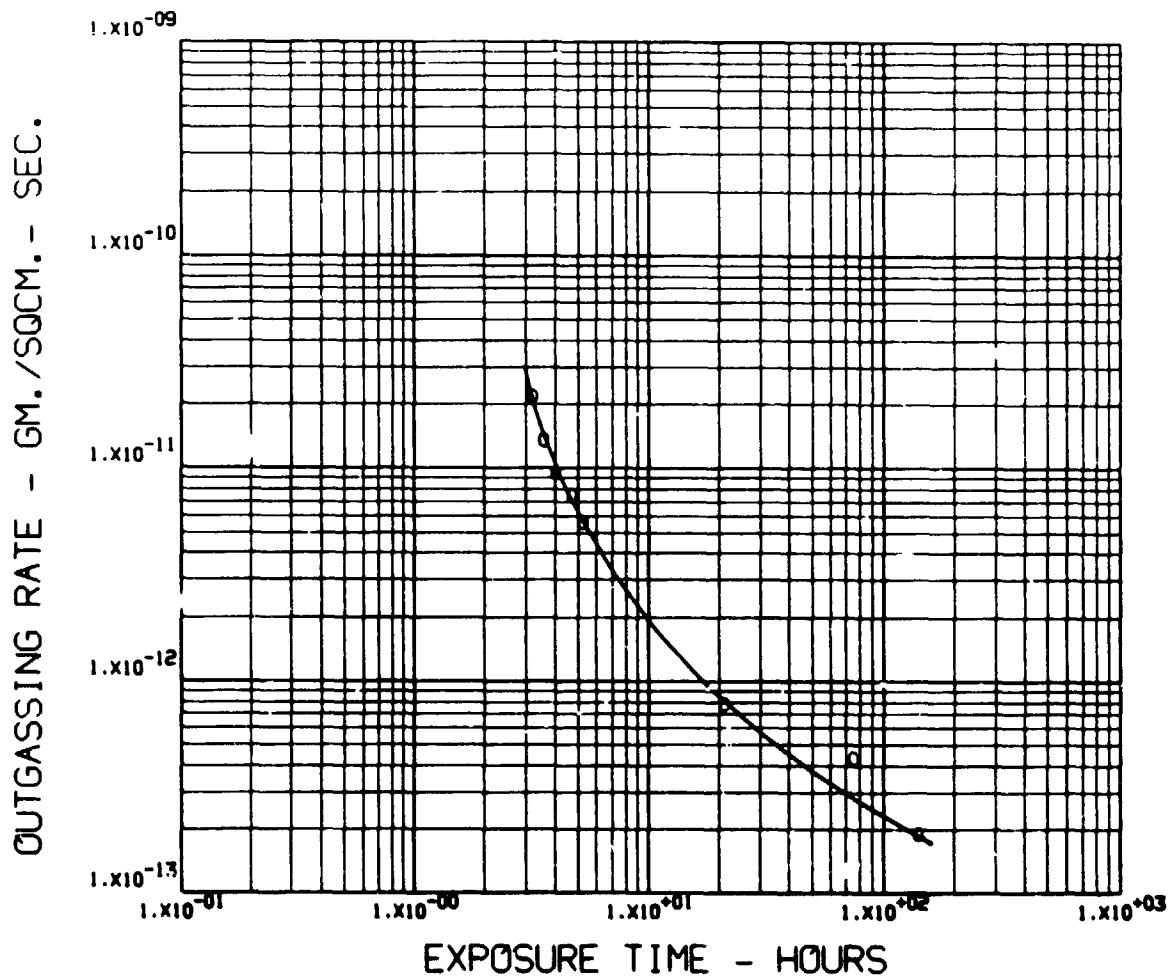
TEST DATE 051871

TEST CHAMBER NO. 2

SAMPLE WEIGHT = .8385 GMS. SAMPLE AREA = 1935. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
3.16	2.15-11	.40	.39	.21
3.50	1.35-11	.50	.35	.15
3.50	1.35-11	.51	.36	.13
4.00	9.53-12	.46	.40	.14
4.66	7.37-12	.48	.40	.12
5.25	5.51-12	.28	.56	.15
20.66	7.71-13	.36	.61	.03
74.08	4.32-13	.29	.66	.06
140.58	1.90-13	.38	.58	.04

PROPERTY- OUTGASSING
MATERIAL- DOUBLE ALUMINIZED MYLAR



ENVIRONMENT 48 VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGAS SING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.28660+00
	10.0	.28620+00
I	.0	.28250+00
	10.0	.28170+00
I	.0	.28760+00
	150.0	.28750+00
I	.0	.32380+00
	150.0	.32350+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.27850+00
	24.0	.27810+00
I	.0	.31550+00
	24.0	.31460+00
I	.0	.28600+00
	240.0	.28470+00
I	.0	.28150+00
	240.0	.27820+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

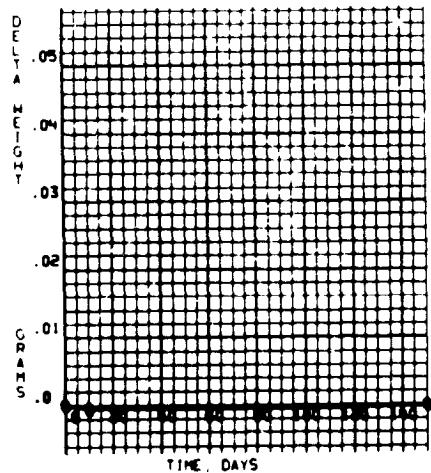
F	DEG R	DEG K	GRAMS
I	-	-	.28600+00
	660.	367.	.28470+00
I	-	-	.28150+00
	660.	367.	.27820+00
I	-	-	.28290+00
	530.	294.	.28150+00
I	-	-	.28680+00
	530.	294.	.28450+00
I	-	-	.32150+00
	140.	78.	.32060+00
I	-	-	.28200+00
	140.	78.	.28140+00
I	-	-	.31270+00
	37.	21.	.30550+00
I	-	-	.28900+00
	37.	21.	.28650+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.27880+00
	240.0	.27850+00
I	.0	.28460+00
	240.0	.28450+00

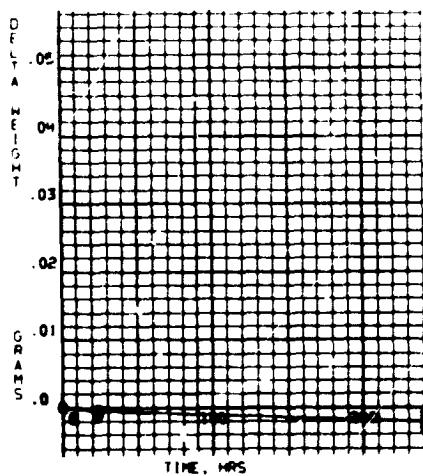
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KARTON, 1/4 MIL

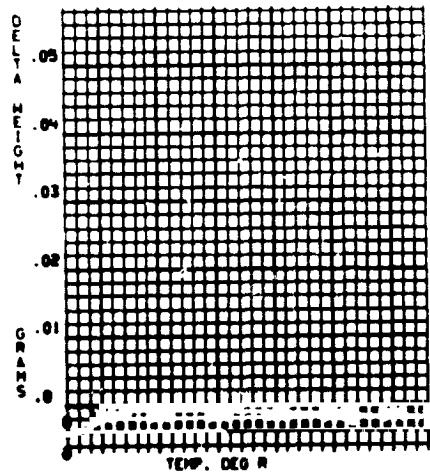


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

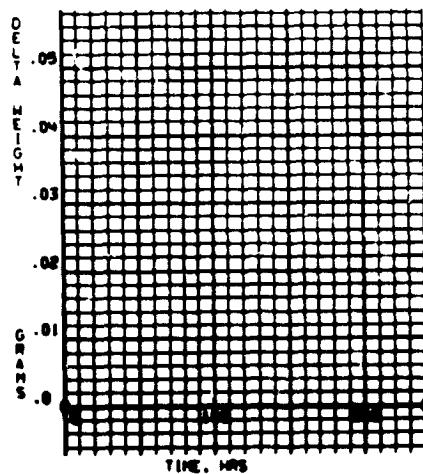
PROPERTY - DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1 E-05 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1 E-05 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE ALUMINIZED KAPTON, 1/4 MIL
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.32240+00
	12.0	.32000+00
	.0	.28940+00
	12.0	.28780+00
	.0	.28050+00
	24.0	.27850+00
	.0	.28000+00
	24.0	.27700+00
	.0	.28000+00
	72.0	.27650+00
	.0	.28300+00
	72.0	.28100+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.30650+00
	12.0	.32200+00
	.0	.32580+00
	12.0	.34320+00
	.0	.28910+00
	24.0	.30000+00
	.0	.29580+00
	24.0	.31150+00
	.0	.28510+00
	72.0	.34350+00
	.0	.28330+00
	72.0	.28000+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	GRAMS
	.0	.28610+00
	.5	.28300+00
	.0	.28250+00
	.5	.28140+00
	.0	.31750+00
	2.0	.31650+00
	.0	.31900+00
	2.0	.31830+00
	.0	.29000+00
	24.0	.28850+00
	.0	.27510+00
	24.0	.28150+00

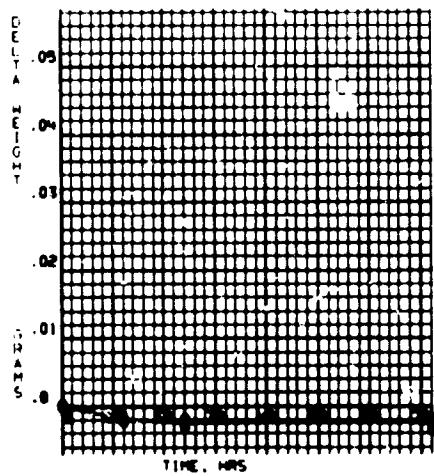
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.30940+00
	150.0	.31750+00
	.0	.31430+00
	150.0	.32200+00

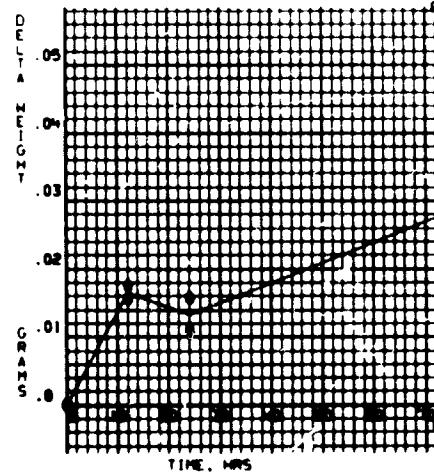
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL

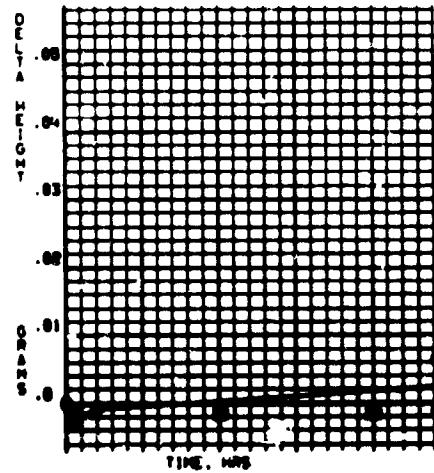
PROPERTY - DELTA WEIGHT



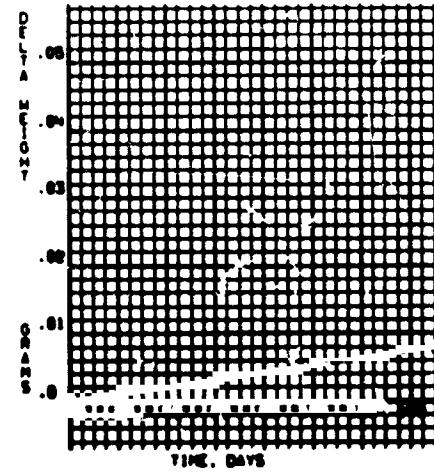
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C.)



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C.)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C.)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - WEIGHT

ENVIRONMENT B (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.27630+00
	150.0	.28300+00
	.0	.31850+00
	150.0	.32550+00

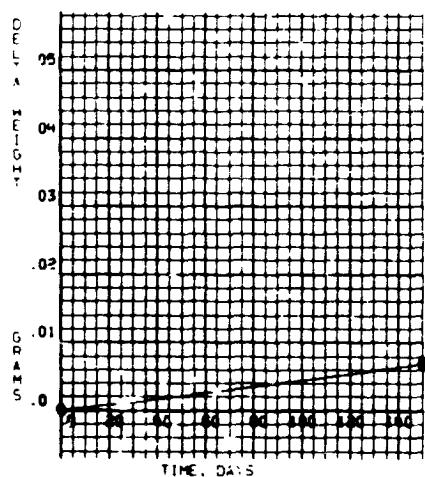
ENVIRONMENT B (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	F	P.P. TORR	GRAMS
		.000	.27650+00
		.100-02	.28400+00
		.000	.27460+00
		.100-02	.27320+00
		.000	.27500+00
		.760+03	.29150+00
		.000	.30800+00
		.760+03	.32450+00

NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL. 1)
 . ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 . THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 . THE E+01 ETC. IS THE EXPONENT OF 10
 . THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KARTON 1/4 MIL

PROPERTY - DELTA WEIGHT



ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL - SINGLE ALIMINIZED KAPTON, 1/4 MIL
 PROPERTY - TENSILE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYs	LB/IN	N/M
	,0	.304+01	.533+03
	,0	.340+01	.596+03
	10.0	.382+01	.669+03
	10.0	.394+01	.690+03
	150.0	.350+01	.613+03
	150.0	.446+01	.781+03

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.422+01	.739+03
	24.0	.400+01	.701+03
	240.0	.410+01	.718+03
	240.0	.310+01	.543+03

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

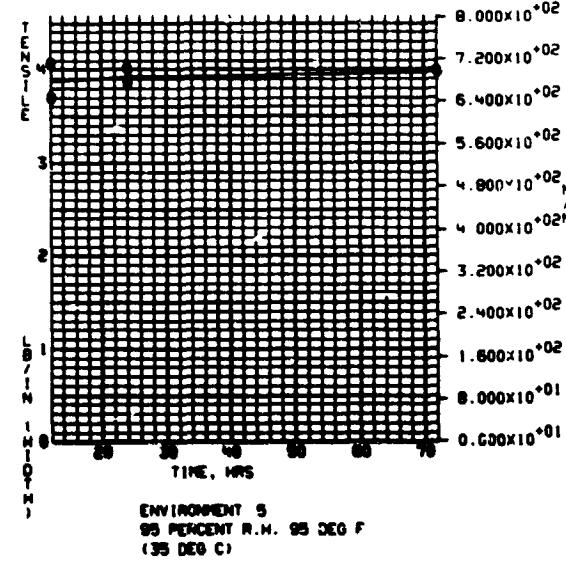
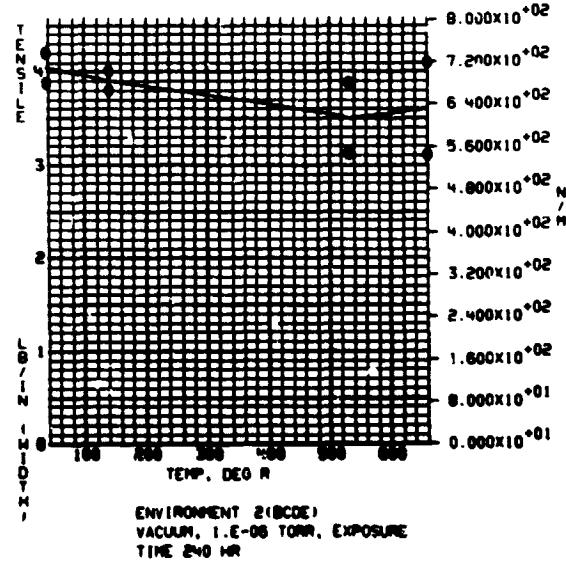
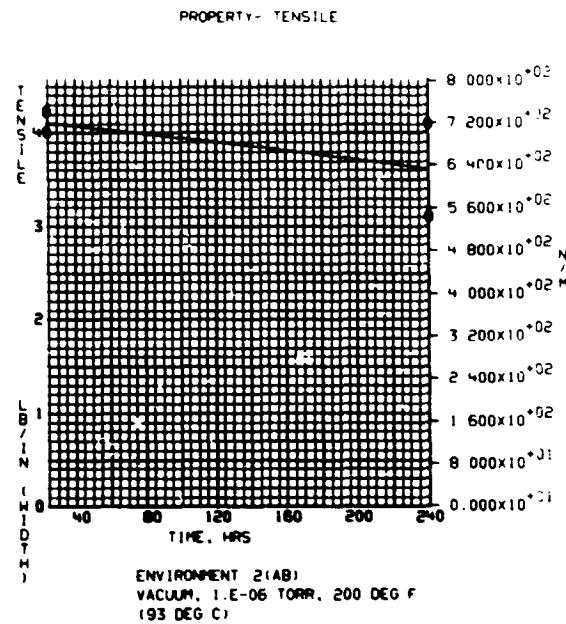
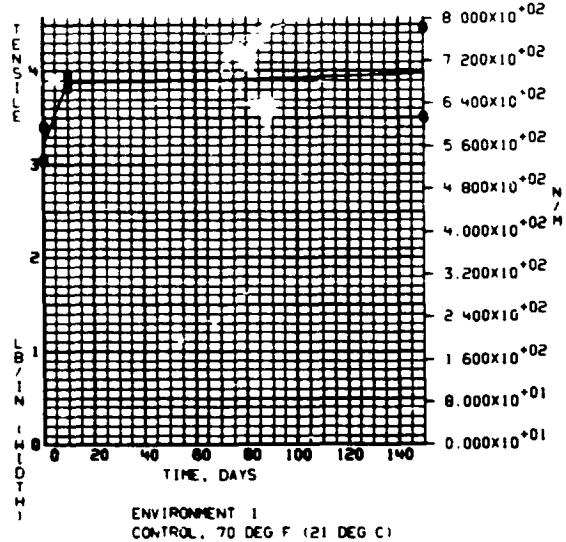
F	DEG R	DEG K	LB/IN	N/M
660.	367.	.410+01	.718+03	
660.	367.	.310+01	.543+03	
530.	294.	.388+01	.680+03	
530.	294.	.312+01	.547+03	
140.	78.	.380+01	.666+03	
140.	78.	.400+01	.701+03	
37.	21.	.388+01	.680+03	
37.	21.	.420+01	.736+03	

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.370+01	.648+03
	12.0	.406+01	.711+03
	24.0	.400+01	.701+03
	24.0	.386+01	.676+03
	72.0	.398+01	.697+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED KAPTON, 1/4 MIL



MATERIAL -SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	LB/IN	N/M	F	HOURS	LB/IN	N/M
	12.0	.370+01	.648+03		.5	.328+01	.575+03
	12.0	.364+01	.638+03		.5	.394+01	.690+03
	24.0	.274+01	.480+03		2.0	.458+01	.802+03
	24.0	.268+01	.470+03		2.0	.400+01	.701+03
	72.0	.396+01	.694+03		24.0	.450+01	.788+03
	72.0	.304+01	.533+03		24.0	.374+01	.655+03

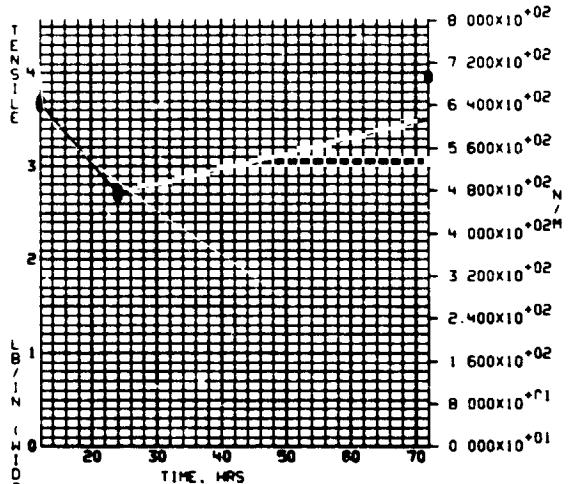
ENVIRONMENT 8 (CD)
 GASFOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M	F	DAYS	LB/IN	N/M
	150.0	.346+01	.606+03		150.0	.448+01	.785+03
	150.0	.430+01	.753+03		150.0	.436+01	.764+03

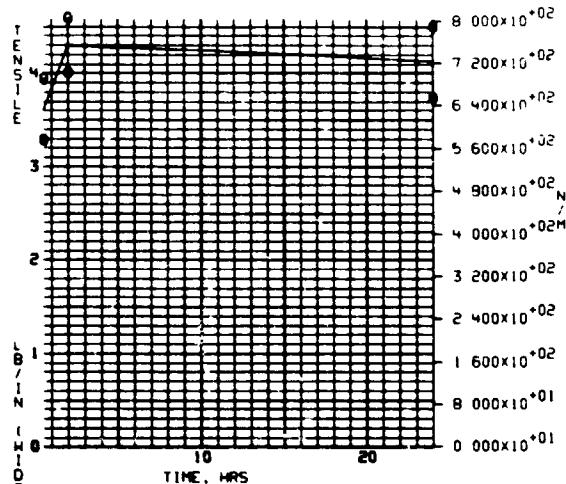
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL

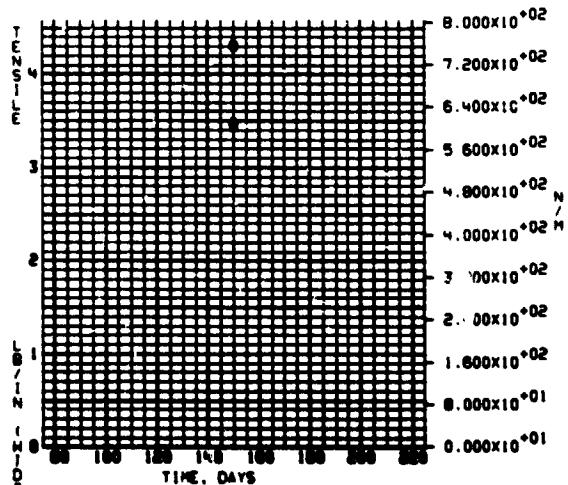


ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

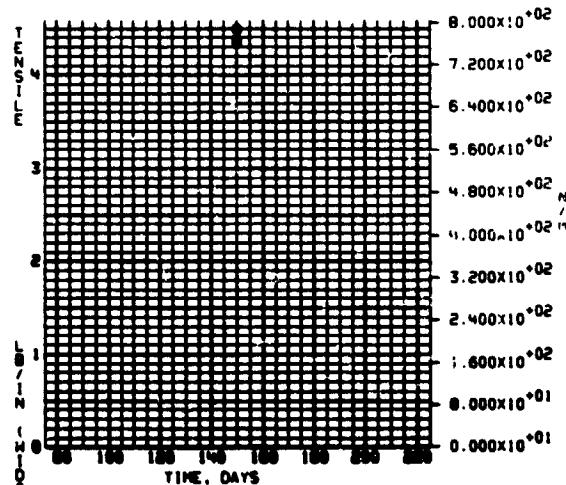
PROPERTY - TENSILE



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR



ENVIRONMENT 8(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
PROPERTY - TENSILE

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	LB/IN	N/M
.100-02		.372+01		.652+03	
.100-02		.420+01		.736+03	
.760+03		.304+01		.533+03	
.760+03		.292+01		.512+03	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

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MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DEG	EMITTANCE
I	.0	.290-01
	10.0	.280-01
I	.0	.290-01
	10.0	.280-01
I	.0	.280-01
	150.0	.380-01
I	.0	.270-01
	150.0	.370-01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	EMITTANCE
I	.0	.260-01
	24.0	.290-01
I	.0	.270-01
	24.0	.280-01
I	.0	.290-01
	240.0	.220-01
I	.0	.300-01
	240.0	.260-01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

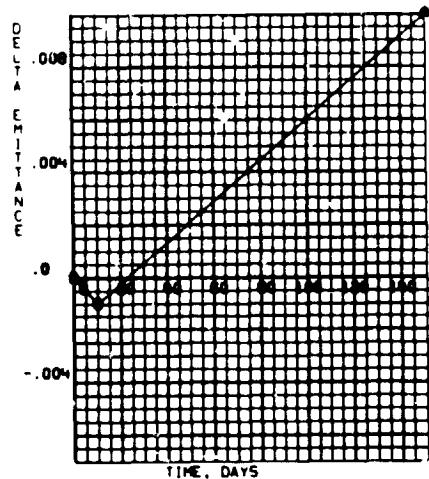
F	DEG R	DEG K	EMITTANCE
I	-	-	.290-01
	660.	367.	.220-01
I	-	-	.300-01
	660.	367.	.260-01
I	-	-	.300-01
	530.	294.	.280-01
I	-	-	.290-01
	530.	294.	.290-01
I	-	-	.300-01
	140.	78.	.300-01
I	-	-	.270-01
	140.	78.	.270-01
I	-	-	.280-01
	37.	21.	.270-01
I	-	-	.280-01
	37.	21.	.270-01

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.280-01
	240.0	.250-01
I	.0	.290-01
	240.0	.250-01

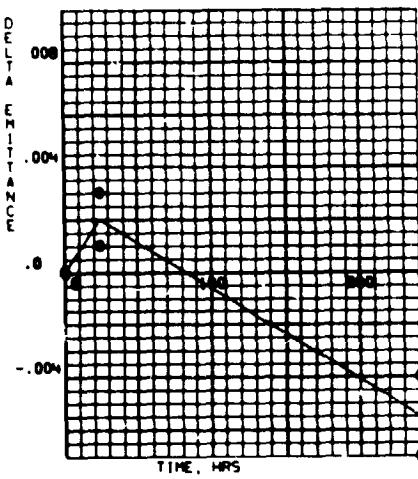
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE ALUMINIZED KAPTON, 1/4 MIL

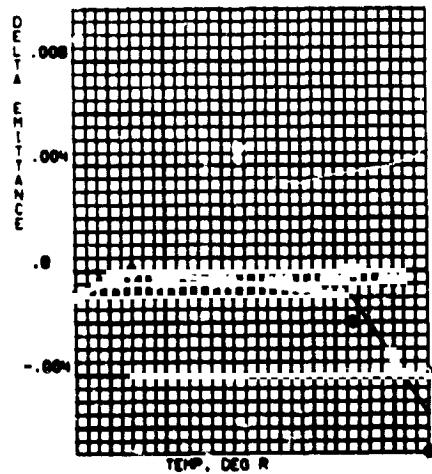


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

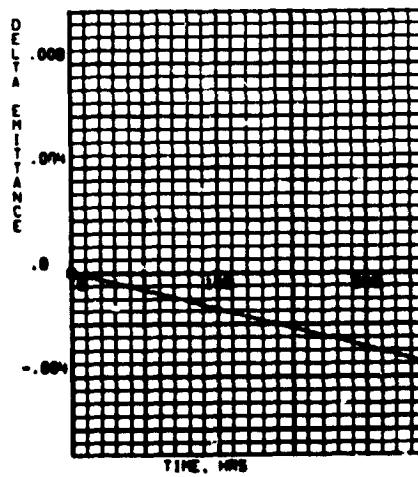
PROPERTY- DELTA EMITTANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CODE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	EMITTANCE
	.0	.300-01
	12.0	.270-01
	.0	.260-01
	12.0	.250-01
	.0	.290-01
	24.0	.220-01
	.0	.280-01
	24.0	.230-01
	.0	.280-01
	72.0	.280-01
	.0	.300-01
	72.0	.280-01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
	.0	.290-01
	12.0	.300-01
	.0	.290-01
	12.0	.280-01
	.0	.260-01
	24.0	.270-01
	.0	.290-01
	24.0	.280-01
	.0	.300-01
	72.0	SAMPLE DESTROYED
	.0	.270-01
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

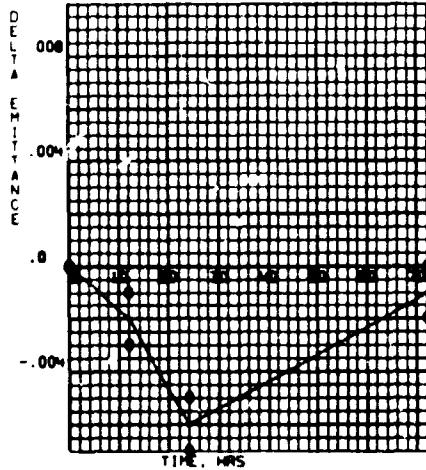
F	HOURS	EMITTANCE
	.0	.280-01
	.5	.280-01
	.0	.280-01
	.5	.280-01
	.0	.270-01
	2.0	.290-01
	.0	.280-01
	2.0	.280-01
	.0	.280-01
	24.0	.270-01
	.0	.270-01
	24.0	.260-01

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.280-01
	150.0	.380-01
	.0	.280-01
	150.0	.330-01

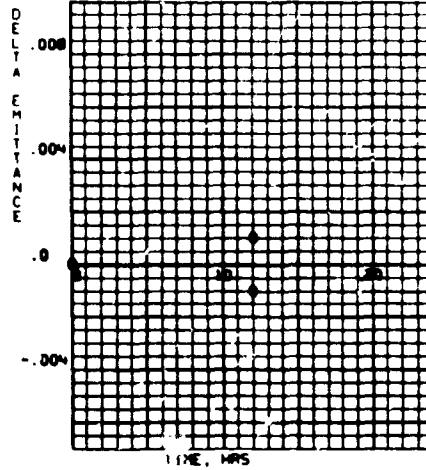
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL

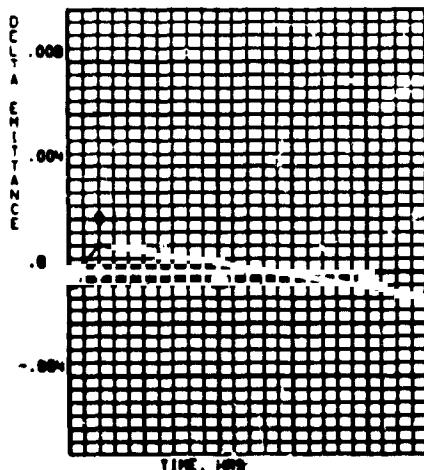


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

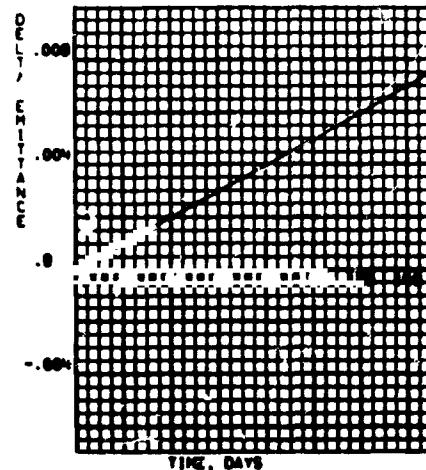
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO₂)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT B (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAY	EMITTANCE
1	.0	.270-01
	150.0	.320-01
1	.0	.300-01
	150.0	.320-01

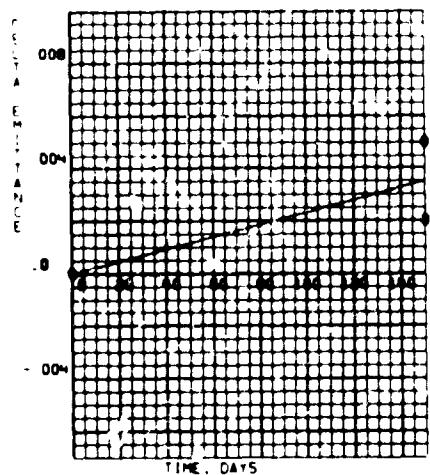
ENVIRONMENT B (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C).4 HR

F	F	P.P. TORR	EMITTANCE
1	.000		.280-01
	.100-02		.340-01
1	.000		.280-01
	.100-02		.330-01
1	.000		.260-01
	.760+03		.330-01
1	.000		.290-01
	.760+03		.350-01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED PARTON - 1.4 MIL

PROPERTY - DEUTA EMISSANCE



ENVIRONMENT: BIEF
GASEOUS FLUORINE, 70 DEG F
121 DEG C 1 E-03 TORR

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY - REFLECTANCE

ENVIRONMENT 1
 CONTROL, 0 DEG F (21 DEG C)

F	DAYs	REFLECTANCE
I	.0	.736+00
I	10.0	.719+00
I	.0	.725+00
I	10.0	.708+00
I	.0	.725+00
I	150.0	.730+00
I	.0	.725+00
I	150.0	.708+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR 200 DEG F
 (93 DEG C)

F	HOURS	REFLECTANCE
I	.0	.617+00
I	24.0	.705+00
I	.0	.727+00
I	24.0	.710+00
I	.0	.736+00
I	240.0	.719+00
I	.0	.634+00
I	240.0	.701+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

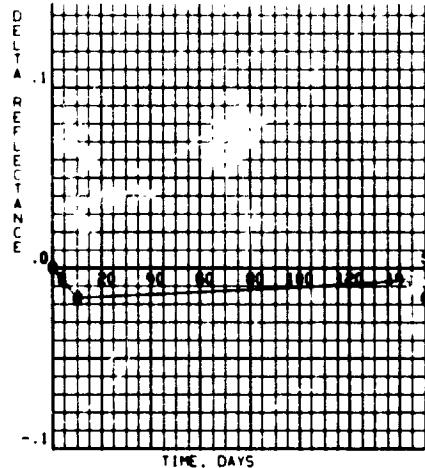
F	DEG R	DEG K	REFLECTANCE
I	-	-	.736+00
I	660.	367.	.719+00
I	-	-	.634+00
I	660.	367.	.711+00
I	-	-	.736+00
I	530.	294.	.719+00
I	-	-	.725+00
I	530.	294.	.723+00
I	-	-	.731+00
I	140.	78.	.714+00
I	-	-	.629+00
I	140.	78.	.712+00
I	-	-	.620+00
I	37.	21.	.711+00
I	-	-	.730+00
I	37.	21.	.714+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	REFLECTANCE
I	.0	.726+00
I	240.0	.694+00
I	.0	.754+00
I	240.0	.653+00

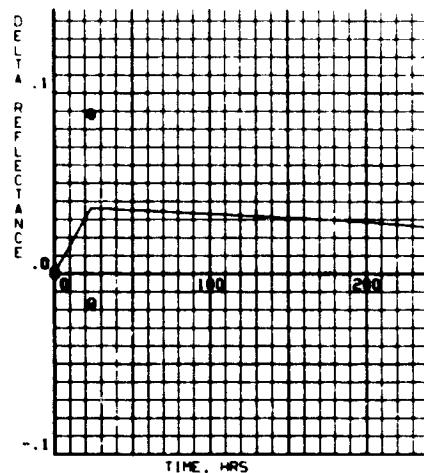
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL

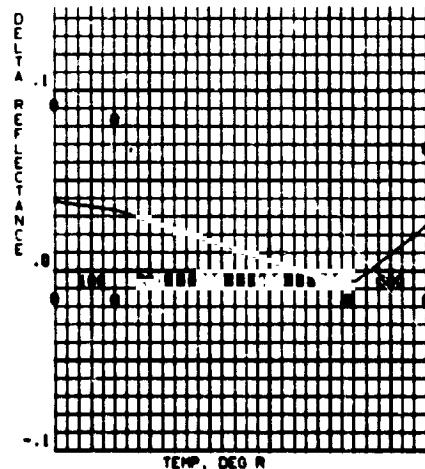


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

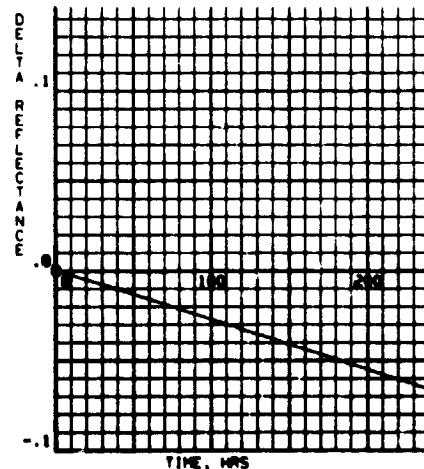
PROPERTY - DELTA REFLECTANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCOE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE ALUMINIZED KAPTON, 1/4 MIL
 PROPERTY -REFLECTANCE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.735+00
	12.0	.719+00
	.0	.739+00
	12.0	.704+00
	.0	.644+00
	24.0	.726+00
	.0	.636+00
	24.0	.724+00
	.0	.716+00
	72.0	.669+00
	.0	.648+00
	72.0	.719+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.724+00
	12.0	.701+00
	.0	.625+00
	12.0	.706+00
	.0	.724+00
	24.0	.713+00
	.0	.726+00
	24.0	.708+00
	.0	.724+00
	72.0	SAMPLE DESTROYED
	.0	.618+00
	72.0	SAMPLE DESTROYED

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	REFLECTANCE
	.0	.615+00
	.5	.711+00
	.0	.626+00
	.5	.715+00
	.0	.643+00
	2.0	.721+00
	.0	.634+00
	2.0	.712+00
	.0	.598+00
	24.0	.710+00
	.0	.694+00
	24.0	.717+00

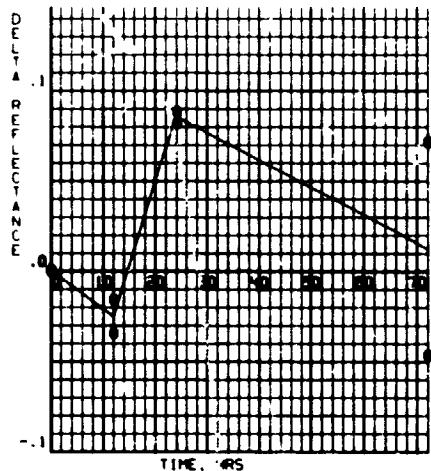
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
	.0	.614+00
	150.0	.760+00
	.0	.720+00
	150.0	.702+00

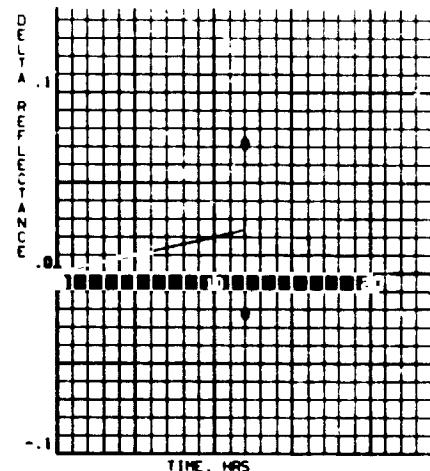
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+0! ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL SINGLE ALUMINIZED KAPTON, 1/4 MIL

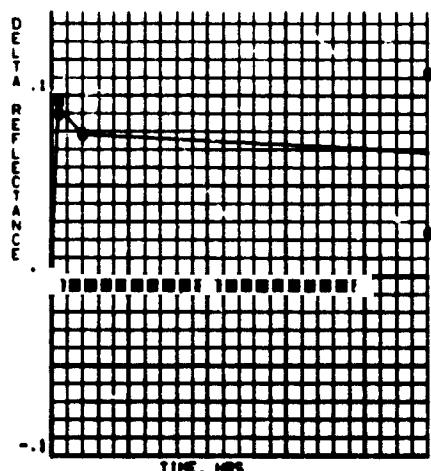
PROPERTY - DELTA REFLECTANCE



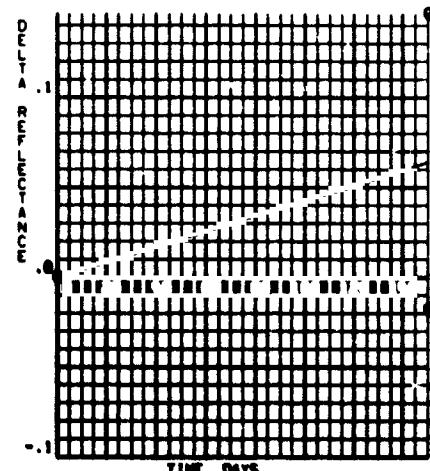
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE ALUMINIZED KAPTON. 1/4 MIL
PROPERTY -REFLECTANCE

ENVIRONMENT 8 (EF)
GASFOS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	UAYS	REFLECTANCE
	.0	.702+00
	150.0	.698+00
	.0	.641+00
	150.0	.695+00

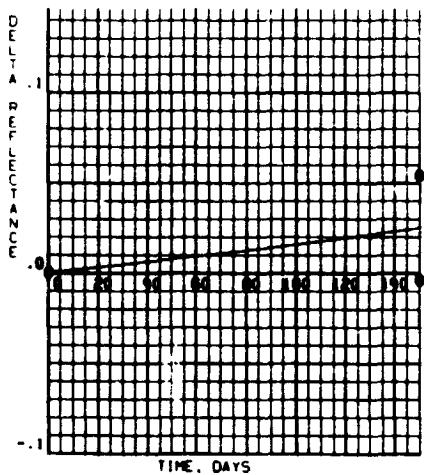
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	REFLECTANCE
	.000			.604+00
	.100-02			.699+00
	.000			.602+00
	.100-02			.699+00
	.000			.725+00
	.760+03			.677+00
	.000			.604+00
				.760+03
				.671+00

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE ALUMINIZED KAPTON, 1/4 MIL

PROPERTY - DELTA REFLECTANCE



ENVIRONMENT (IEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Single Aluminized Kapton, S-A-K

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0
			660 (366)	240	
			530 (294)	240	
			140 (78)	240	
			37 (21)	240	
3	200°F (93°C) 40% R.H.			24	0
				72	
				240	
5	95% R.H. at 95°F (35°C)			12	0
				24	
				72	
6	95% R.H./Salt Air at 95°F(35°C)			12	0
				24	
				72	
7	Water Immersion at 70°F (21°C)			12	0/2**
				24	
				72	
8e, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}		0.5	Coating removed by environment
				2	
				24	
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}		100	0
				3600	
				100	
8g, h	95% R.H./F ₂ at 95°F (35°C)	10^{-3}		3600	.01/.01**
				4	
				4	

* See Table 5 for complete identification of test material (Volume I).

**Two specimens.

FLEXIBILITY TEST RESULTS

Material*: Single Aluminized Kapton, S-A-K

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R (°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr		660 (360)	24	✓		
			660 (360)	240	✓		
			530 (284)	240	✓		
			140 (78)	240	✓		
			37 (21)	240	✓		
				24			
3	200°F (93°C) 40% R.H.			72	✓		
				240	✓		
5	95% R.H. at 95°F (35°C)			12	✓		
				24	✓		
				72	✓		
6	95% R.H./Salt Air at 95°F(35°C)			12	✓		
				24	✓		
				72	✓		
7	Water Immersion at 70°F (21°C)			0.5	✓		
				2	✓		
				24	✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³		100			
				3600	✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³		100			
				3600	✓		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³		4	✓		
				760	✓		

* See Table 5 for complete identification of test material(Volume I)

** As compared to control samples

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SINGLE ALUMINIZED KAPTON

ENVIRONMENT 2B

VACUUM = 10^{-6} TORR, 660 DEG.R (365 DEG.K)

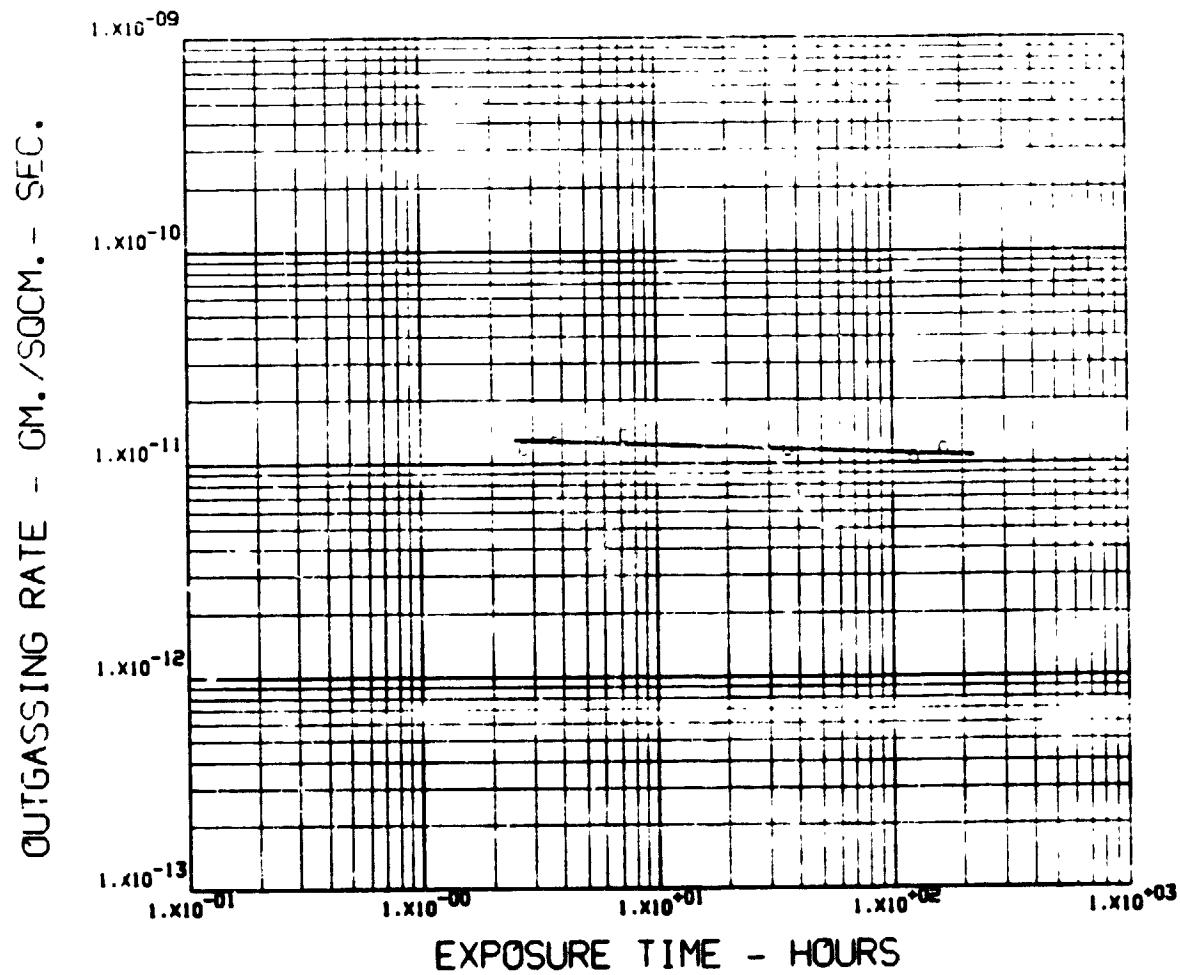
TEST DATE 032371

TEST CHAMBER NO. 2

SAMPLE WEIGHT = .9680 GMS. SAMPLE AREA = 1935. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H ₂ O	N ₂	C ₀ 2
2.70	1.18-11	.86	.10	.04
3.67	1.26-11	.86	.10	.04
5.67	1.24-11	.87	.08	.05
7.24	1.34-11	.86	.09	.05
35.70	1.15-11	.89	.07	.04
124.84	1.06-11	.93	.04	.03
166.04	1.15-11	.92	.05	.03

PROPERTY - OUTGASSING
MATERIAL - SINGLE ALUMINIZED KAPTON



ENVIRONMENT 28 VACUUM. 10-6 TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SINGLE ALUMINIZED KAPTON

ENVIRONMENT 2C

VACUUM, 1UE-06 TORR, 530 DEG.R (295 DEG.K)

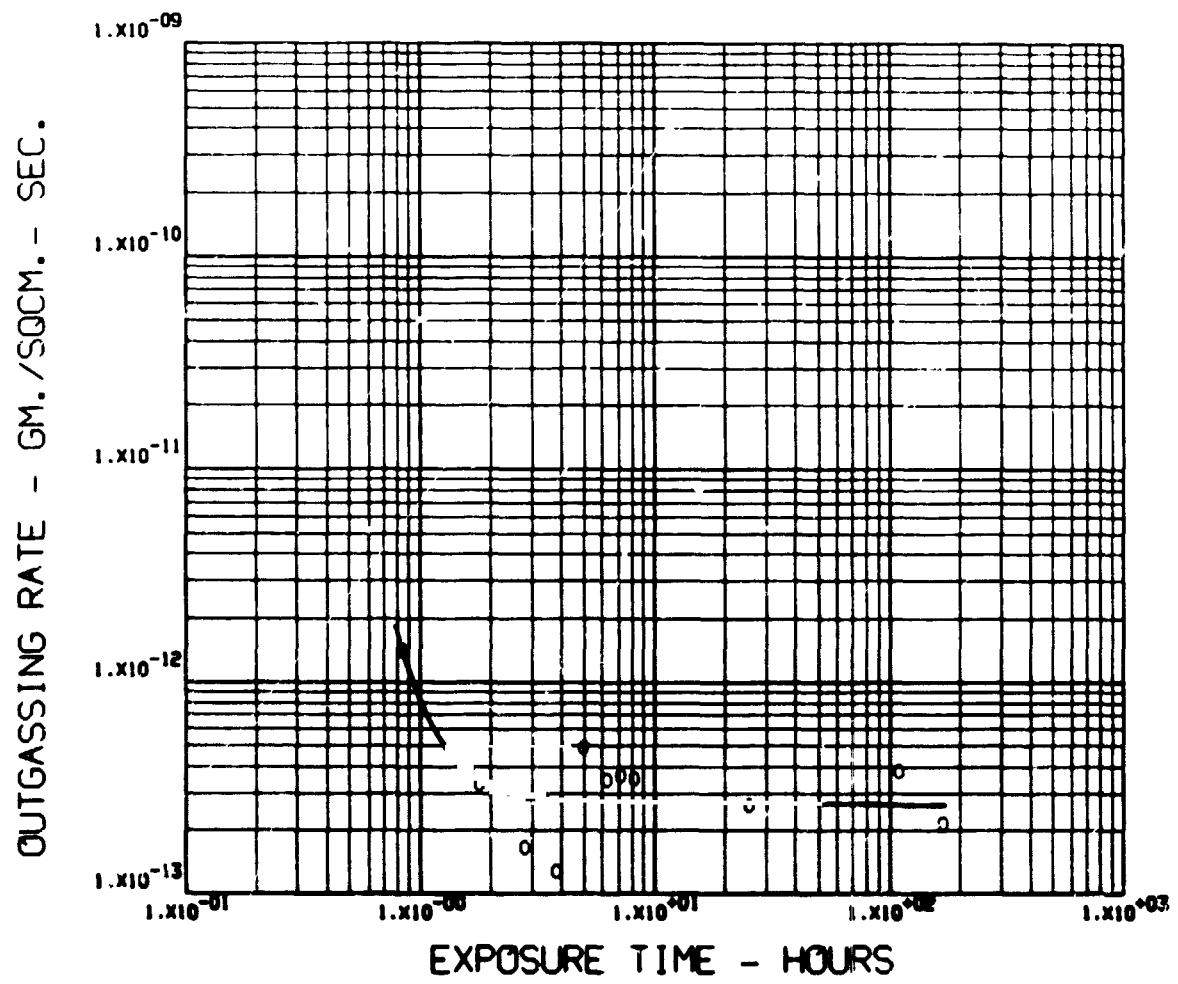
TEST DATE 012871

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.0840 GMS. SAMPLE AREA = 2082. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.84	1.41-13	.73	.20	.07
1.75	3.29-13	.73	.24	.04
2.75	1.65-13	.72	.26	.02
3.75	1.26-13	.73	.27	.00
4.92	4.85-13	.82	.18	.00
6.22	3.43-13	.77	.23	.00
7.14	3.57-13	.59	.41	.00
8.14	3.46-13	.60	.40	.00
25.09	2.58-13	.20	.71	.09
108.75	3.77-13	.24	.76	.00
167.92	2.13-13	.22	.78	.00

PROPERTY- OUTGASSING
MATERIAL- SINGLE ALUMINIZED KAPTON



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE ALUMINIZED KAPTON

ENVIRONMENT 4A

VACUUM, 10^{-6} TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY GASEOUS NITROGEN PULSE AT 760 TORR, 530 DEG.R (294 DEG.K), FOR 4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

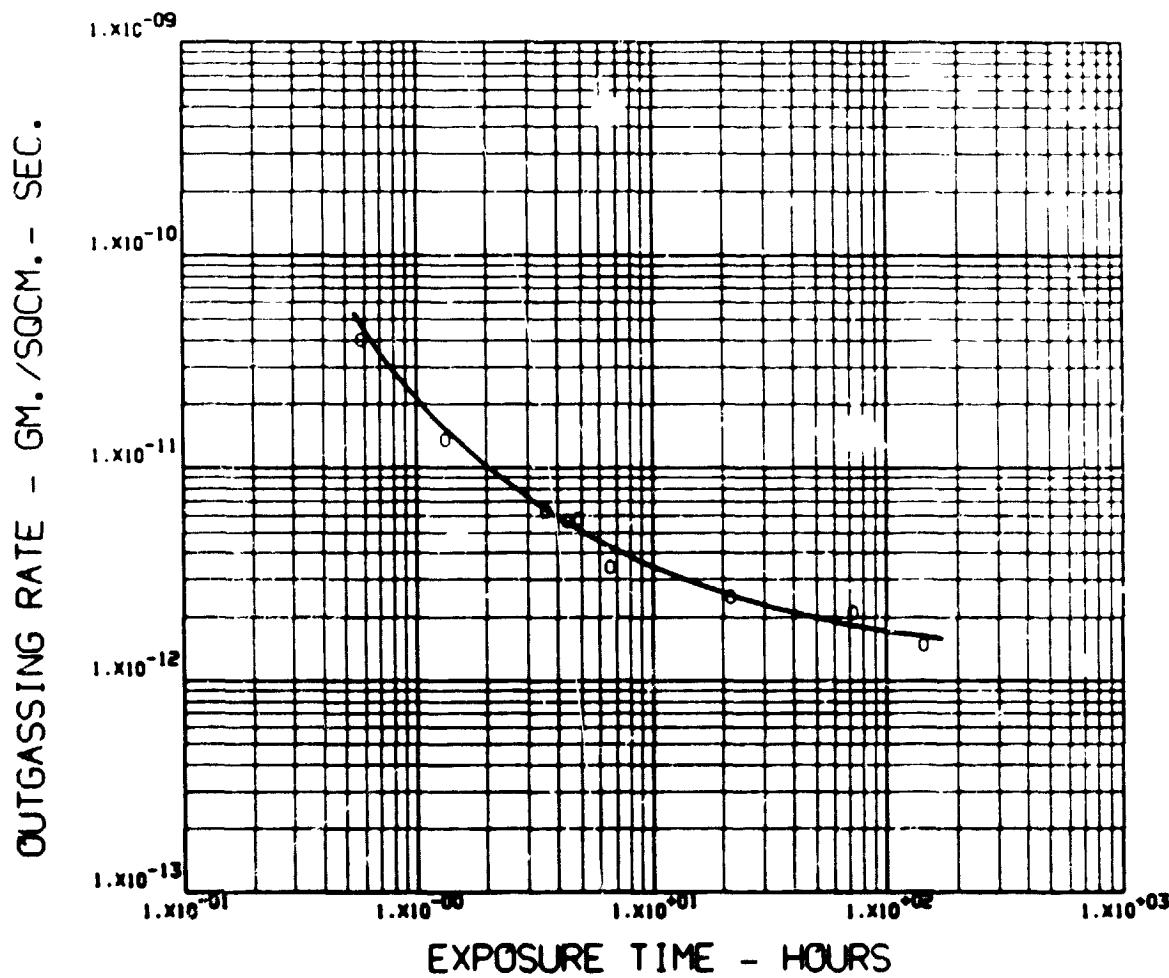
TEST DATE 051672

TEST CHAMBER NO. 2

SAMPLE WEIGHT = .9770 GMS. SAMPLE AREA = 1952. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.58	3.97-11	.26	.00	.74
1.33	1.35-11	.66	.00	.34
3.50	6.23-12	.46	.00	.54
4.33	5.66-12	.59	.00	.41
4.83	5.75-12	.62	.00	.38
6.58	3.42-12	.48	.00	.52
21.33	2.46-12	.55	.00	.45
71.43	2.09-12	.29	.00	.71
142.58	1.46-12	.74	.00	.26

PROPERTY - OUTGASSING
MATERIAL - SINGLE ALUMINIZED KAPTON



ENVIRONMENT 4A VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.
) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR.
530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSI
NG TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE ALUMINIZED KAPTON

ENVIRONMENT 4H

VACUUM, 1UE-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

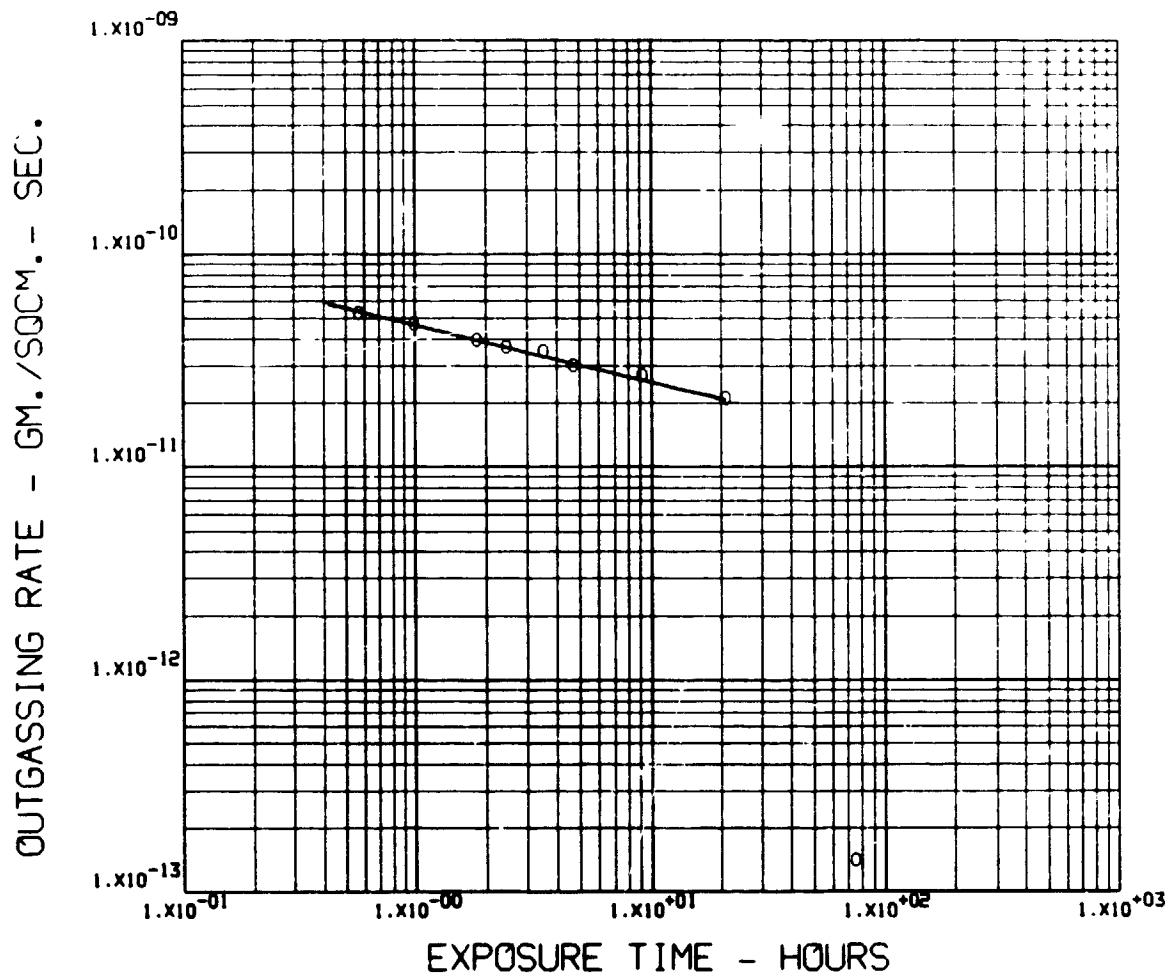
TEST DATE 051971

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .9685 GMS. SAMPLE AREA = 1936. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.57	5.25-11	.38	.37	.25
.98	4.63-11	.30	.47	.23
1.82	3.94-11	.26	.50	.23
2.40	3.64-11	.20	.54	.26
3.48	3.46-11	.12	.43	.45
4.65	2.98-11	.13	.53	.35
9.07	2.69-11	.17	.50	.34
20.82	2.09-11	.14	.54	.32
74.32	1.40-13	.15	.54	.32

PROPERTY- OUTGASSING
MATERIAL- SINGLE ALUMINIZED KAPTON



ENVIRONMENT 4B VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.
) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR
R. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGAS
SING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DEAYS	GRAMS
I	.0	.27750+00
I	10.0	.27730+00
I	.0	.27950+00
I	10.0	.27860+00
I	.0	.27640+00
I	150.0	.27650+00
I	.0	.27350+00
I	150.0	.27450+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.27160+00
I	240.0	.26950+00
I	.0	.27250+00
I	240.0	.27150+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

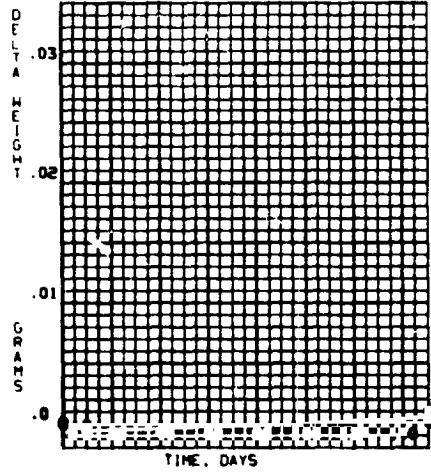
F	DEG R	DEG K	GRAMS
I	-	-	.27160+00
I	660.	367.	.26950+00
I	-	-	.27250+00
I	660.	367.	.27150+00
I	-	-	.26800+00
I	530.	294.	.26700+00
I	-	-	.26640+00
I	530.	294.	.26550+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.27150+00
I	240.0	.27350+00
I	.0	.27620+00
I	240.0	.27650+00

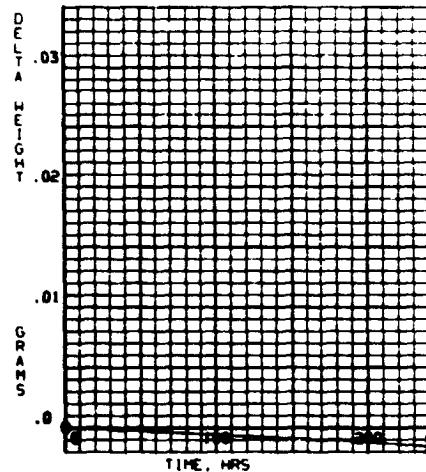
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

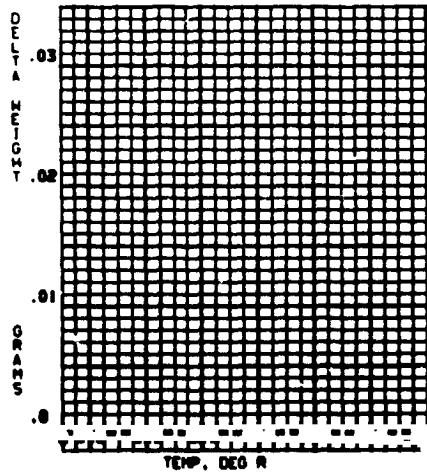


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

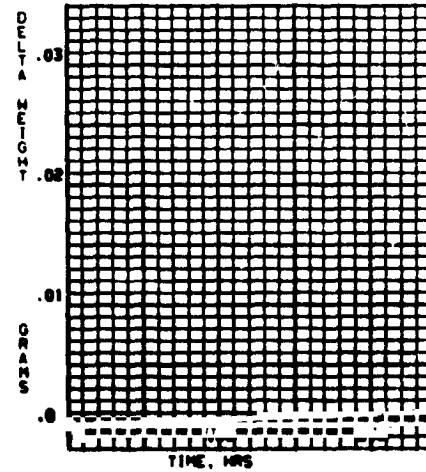
PROPERTY- DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL.
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
I	.0	.26400+00
	72.0	.26300+00
I	.0	.27550+00
	72.0	.27480+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
I	.0	.21250+00
	72.0	.30750+00
I	.0	.28150+00
	72.0	.31150+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

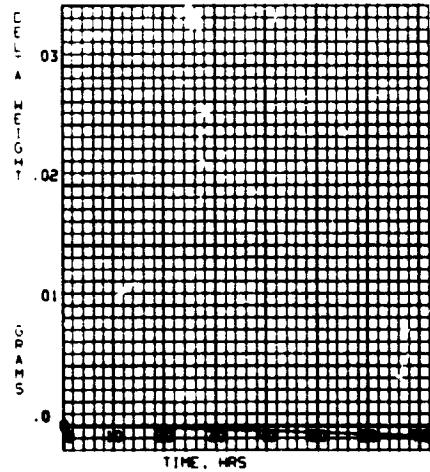
F	HOURS	GRAMS
I	.0	.27470+00
	.5	.27550+00
I	.0	.26650+00
	.5	.26700+00
I	.0	.26260+00
	2.0	.26260+00
I	.0	.26630+00
	2.0	.26600+00
I	.0	.26600+00
	24.0	.26700+00
I	.0	.26920+00
	24.0	.27000+00

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.25670+00
	4.2	.26750+00
I	.0	.25650+00
	4.2	.25700+00
I	.0	.26620+00
	150.0	.26450+00
I	.0	.26400+00
	150.0	.26500+00

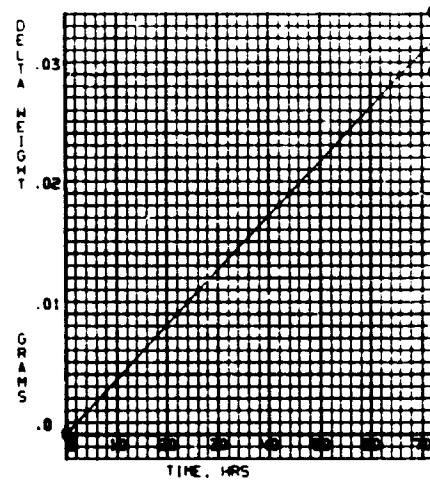
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE ± 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR 1/4 MIL

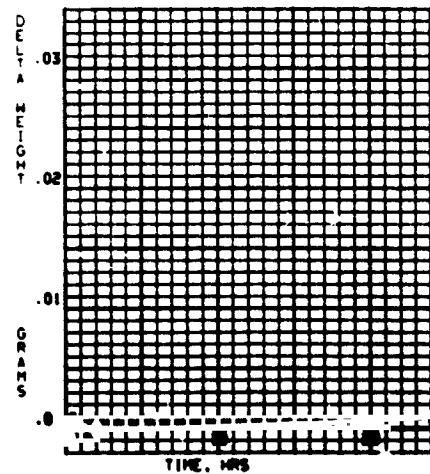


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

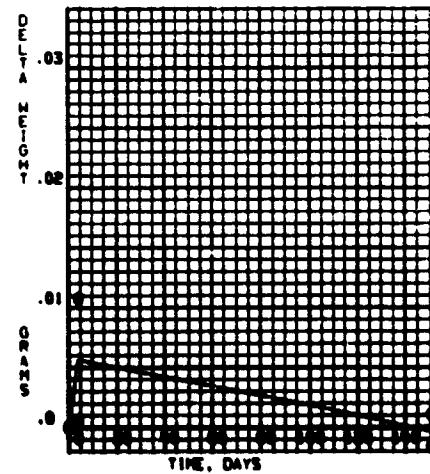
PROPERTY - DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F			DAYS	GRAMS
	.	.	0	.27390+00
	.	.	4.2	.27750+00
	.	.	0	.27300+00
	.	.	4.2	.27850+00
	.	.	0	.27000+00
	.	.	150.0	.27540+00
	.	.	0	.27530+00
	.	.	150.0	.28010+00

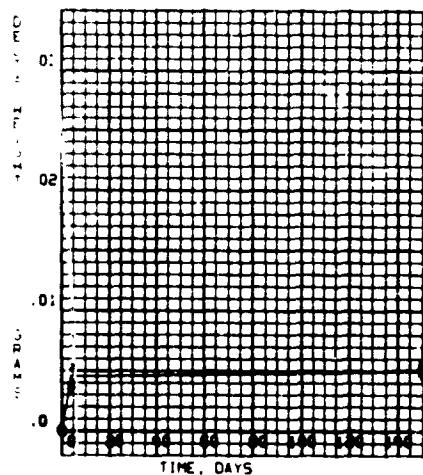
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	GRAMS
	.	.	000	.27800+00
	.	.	100-02	.28400+00
	.	.	000	.26000+00
	.	.	100-02	.26050+00
	.	.	000	.26700+00
	.	.	760+03	SAMPLE DESTROYED
	.	.	000	.27150+00
	.	.	760+03	SAMPLE DESTROYED

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY - DELTA HEIGHT



ENVIRONMENT (IEFI)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY - TENSILE

ENVIRONMENT 1 CONTROL, 70 DEG F (21 DEG C)			ENVIRONMENT 2 (AB) VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DAYS	LB/IN	N/M	F	HOURS
.0		.364+01	.638+03		
.0		.372+01	.652+03	240.0	
10.0		.414+01	.725+03	240.0	
10.0		.416+01	.729+03		
150.0		.430+01	.753+03		
150.0		.384+01	.673+03		

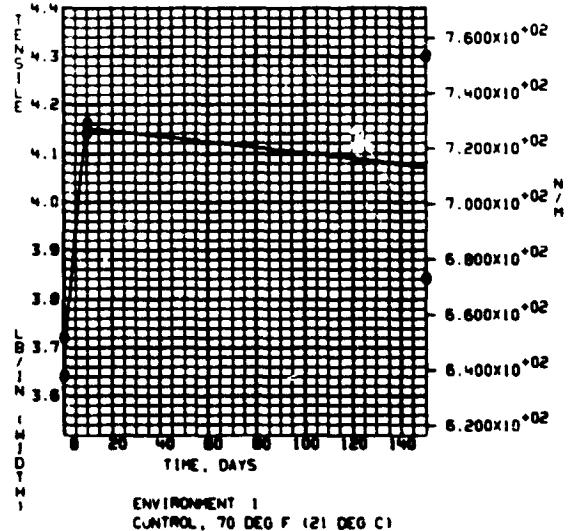
ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	DEG R	DEG K	LB/IN	N/M	F	HOURS	LB/IN	N/M
660.	367.		.410+01	.718+03		240.0	.400+01	.701+03
660.	367.		.410+01	.718+03		240.0	.394+01	.690+03
530.	294.		.400+01	.701+03				
530.	294.		.400+01	.701+03				

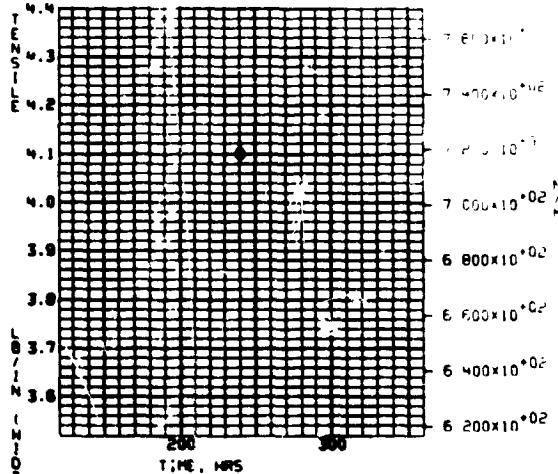
- NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL

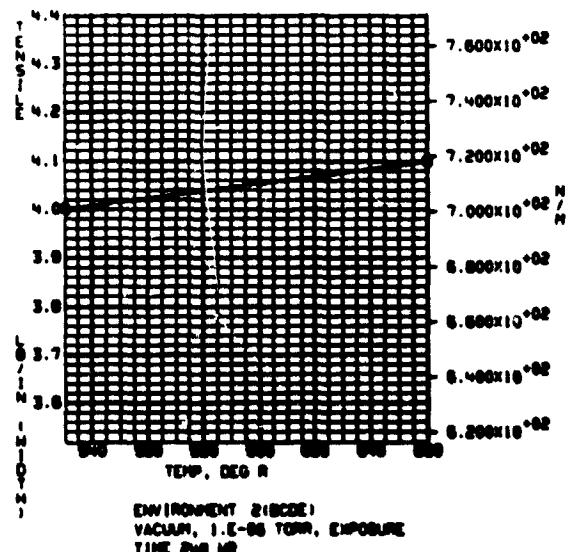


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

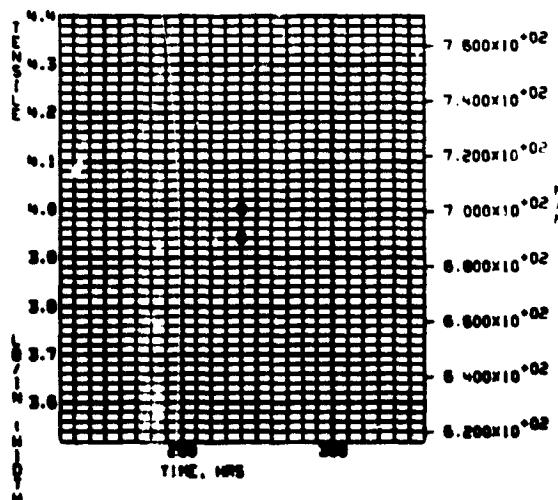
PROPERTY - TENSILE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	72.0	.402+01	.704+03
	72.0	.408+01	.715+03

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	72.0	.356+01	.624+03
	72.0	.374+01	.655+03

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

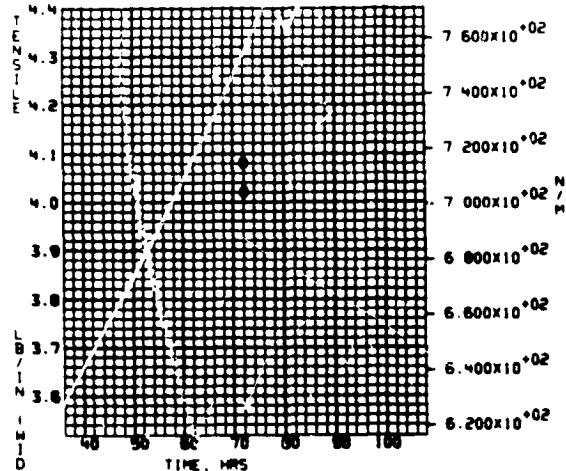
F	HOURS	LB/IN	N/M
	.5	.388+01	.680+03
	.5	.396+01	.694+03
	2.0	.382+01	.669+03
	2.0	.364+01	.638+03
	24.0	.422+01	.739+03
	24.0	.440+01	.771+03

ENVIRONMENT 8 (CD)
GASFOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M
	4.2	.406+01	.711+03
	4.2	.400+01	.701+03
	150.0	.400+01	.701+03
	150.0	.440+01	.771+03

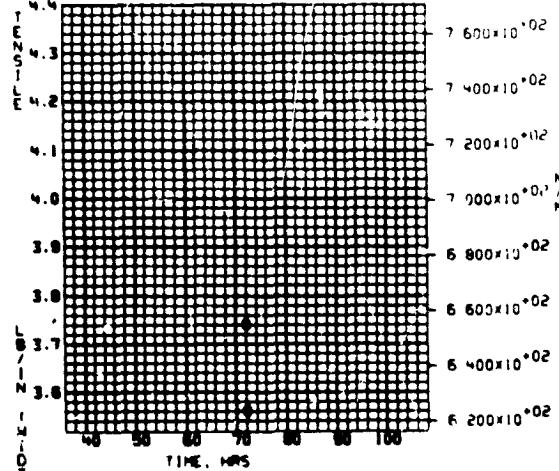
NOTE. •SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
•ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
•THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
•THE E+01 ETC. IS THE EXPONENT OF 10
•THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL

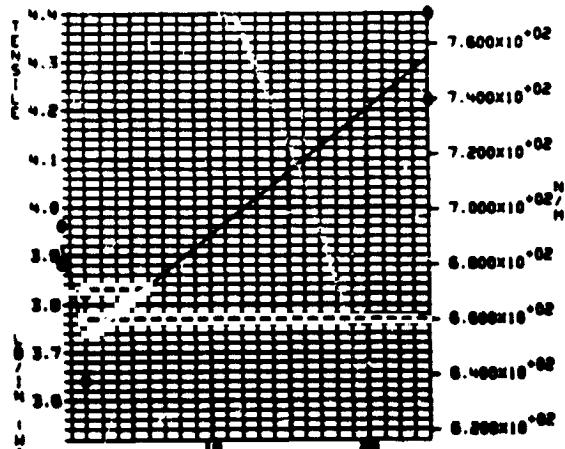


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C.)

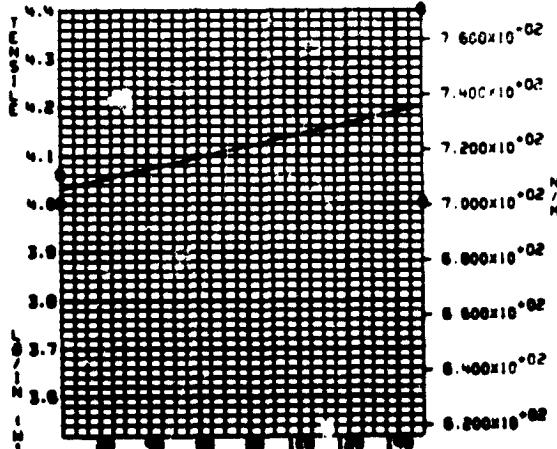
PROPERTY - TENSILE



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C.)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C.)



ENVIRONMENT 8(CD)
GASEOUS CHLORIDE, 70 DEG F
(21 DEG C) 1.0E-03 TORR

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

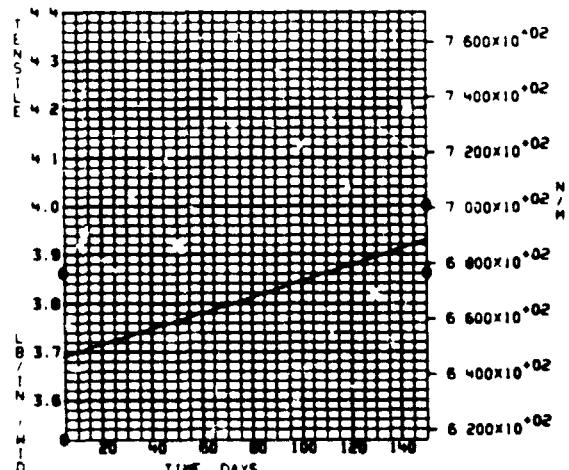
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINF
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	DAYs	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
	4.2	.386+01	.676+03		.100-02			.362+01	.634+03
	4.2	.352+01	.617+03		.100-02			.360+01	.631+03
	150.0	.386+01	.676+03		.760+03			SAMPLE DESTROYED	
	150.0	.400+01	.701+03		.760+03			SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY - TENSILE



ENVIRONMENT (SIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
	.0	.180-01
	10.0	.210-01
	.0	.190-01
	10.0	.200-01
	.0	.180-01
	150.0	.300-01
	.0	.200-01
	150.0	.290-01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	EMITTANCE
	.0	.180-01
	240.0	.150-01
	.0	.200-01
	240.0	.140-01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

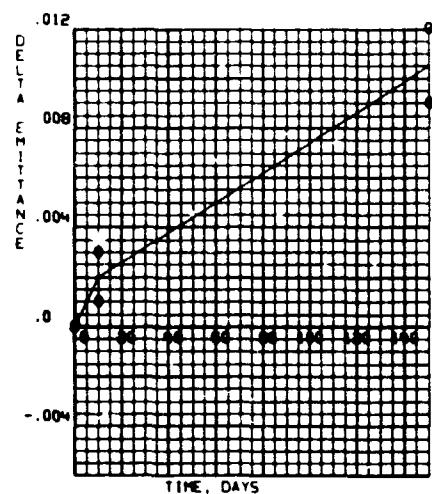
F	DEG R	DEG K	EMITTANCE
	-	-	.180-01
	660.	367.	.150-01
	-	-	.200-01
	660.	367.	.140-01
	-	-	.180-01
	530.	294.	.210-01
	-	-	.190-01
	530.	294.	.220-01

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
	.0	.170-01
	240.0	.210-01
	.0	.180-01
	240.0	.190-01

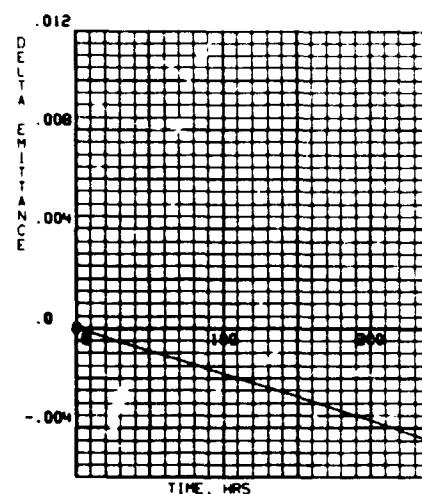
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

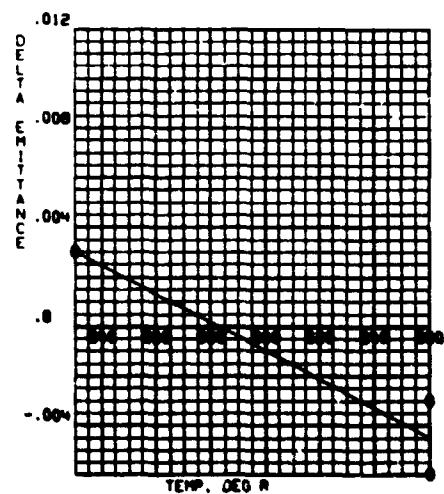


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

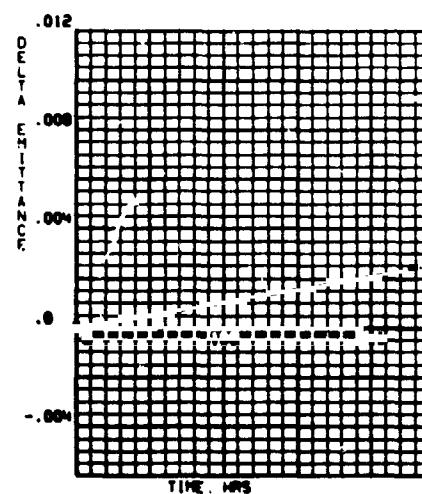
PROPERTY- DELTA EMITTANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY - EMITTANCE

ENVIRONMENT 5			ENVIRONMENT 6		
95 PERCENT R.H., 95 DEG F (35 DEG C)			95 PERCENT R.H./SALT AIR 95 DEG F (35 DEG C)		
F	HOURS	EMITTANCE	F	HOURS	EMITTANCE
	.0	.190-01		.0	.180-01
	72.0	.190-01		72.0	.260-01
	.0	.180-01		.0	.190-01
	72.0	.190-01		72.0	.260-01

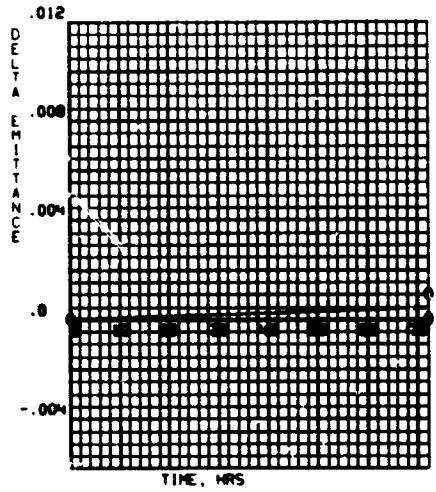
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	EMITTANCE	F	DAYS	EMITTANCE
	.0	.180-01		.0	.180-01
	.5	.170-01		4.2	.210-01
	.0	.180-01		.0	.180-01
	.5	.200-01		4.2	.250-01
	.0	.200-01		.0	.190-01
	2.0	.200-01		150.0	.220-01
	.0	.190-01		.0	.170-01
	2.0	.200-01		150.0	.230-01
	.0	.180-01			
	24.0	.170-01			
	.0	.180-01			
	24.0	.180-01			

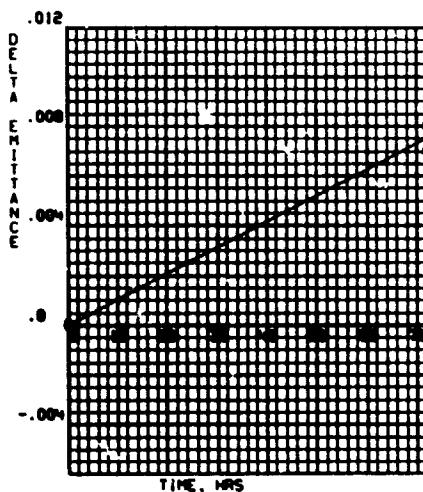
NOTE:
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

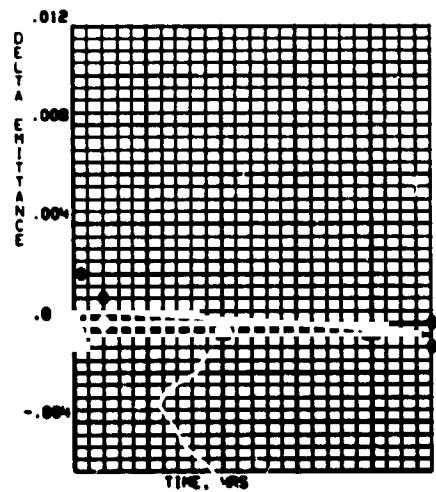


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

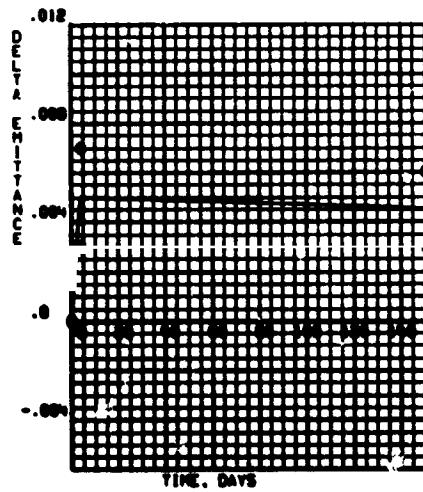
PROPERTY- DELTA EMISSANCE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO₂)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.170-01
	4.2	.200-01
	.0	.170-01
	4.2	.160-01
	.0	.190-01
	150.0	.260-01
	.0	.180-01
	150.0	.210-01

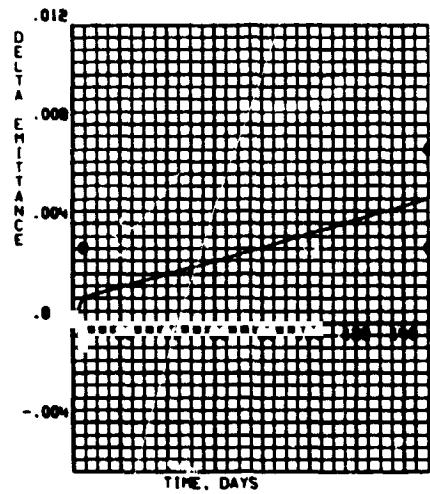
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	EMITTANCE
	.000		.180-01
	.100-02		.250-01
	.000		.190-01
	.100-02		.270-01
	.000		.190-01
	.760+03	SAMPLE DESTROYED	
	.000		.180-01
	.760+03	SAMPLE DESTROYED	

NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY - DELTA EMITTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY - REFLECTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	REFLECTANCE
	.0	.771+00
	10.0	.794+00
	.0	.782+00
	10.0	.780+00
	.0	.798+00
	150.0	.782+00
	.0	.772+00
	150.0	.777+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	REFLECTANCE
	.0	.778+00
	240.0	.785+00
	.0	.782+00
	240.0	.789+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R	DEG K	REFLECTANCE
	-	-	.778+00
	660.	367.	.785+00
	-	-	.782+00
	660.	367.	.789+00
	-	-	.778+00
	530.	294.	.721+00
	-	-	.797+00
	530.	294.	.772+00

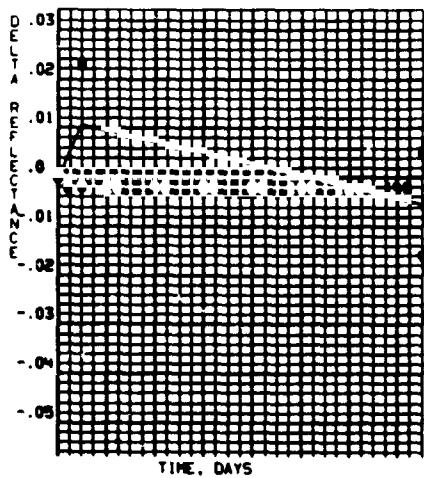
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	REFLECTANCE
	.0	.778+00
	240.0	.759+00
	.0	.755+00
	240.0	.782+00

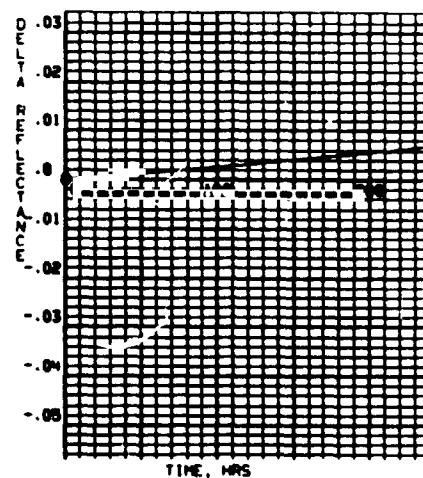
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

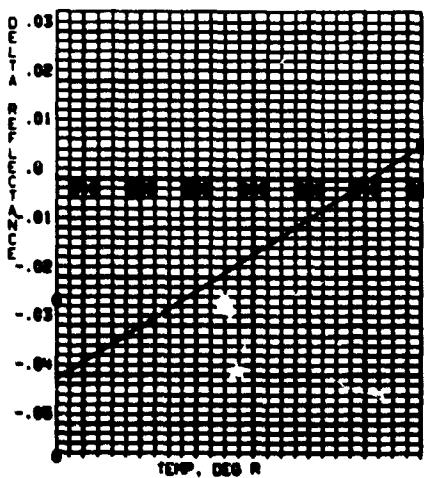
PROPERTY- DELTA REFLECTANCE



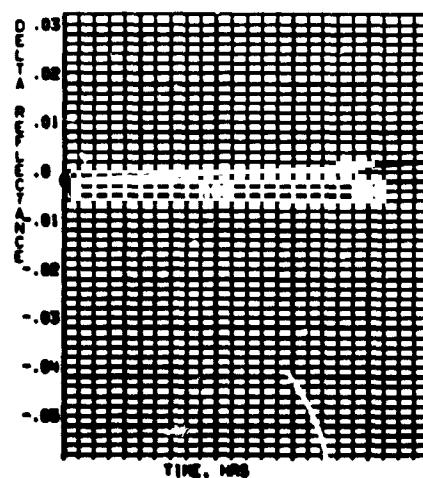
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-08 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-08 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -REFLECTANCE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.755+00
	72.0	.789+00
	.0	.778+00
	72.0	.764+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.788+00
	72.0	.796+00
	.0	.779+00
	72.0	.788+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

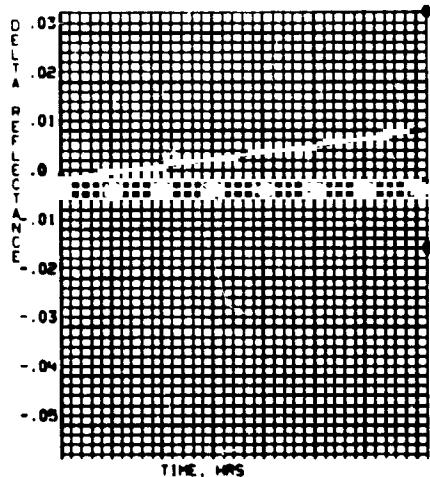
F	HOURS	REFLECTANCE
	.0	.773+00
	.5	.784+00
	.0	.783+00
	.5	.774+00
	.0	.768+00
	2.0	.769+00
	.0	.771+00
	2.0	.787+00
	.0	.774+00
	24.0	.784+00
	.0	.762+00
	24.0	.779+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
	.0	.779+00
	4.2	.749+00
	.0	.777+00
	4.2	.781+00
	.0	.771+00
	150.0	.740+00
	.0	.783+00
	150.0	.773+00

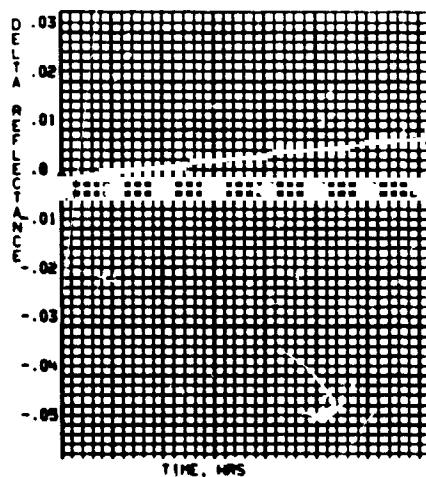
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

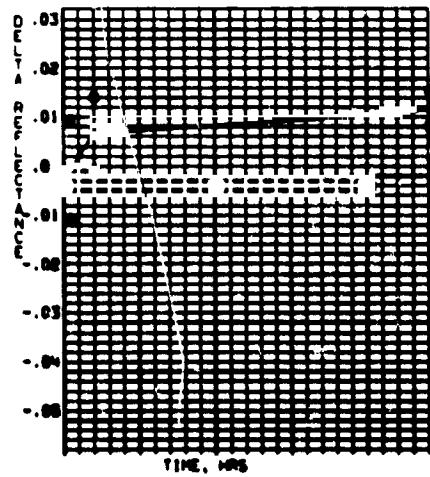


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

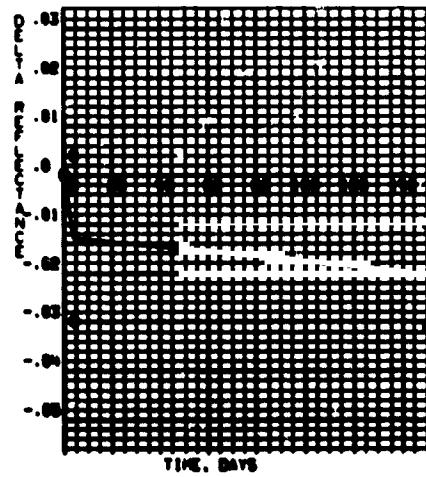
PROPERTY- DELTA REFLECTANCE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
MATERIAL IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
BASED ON OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -REFLECTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
	.0	.772+00
	4.2	.741+00
	.0	.690+00
	4.2	.689+00
	.0	.766+00
	150.0	.759+00
	.0	.772+00
	150.0	.772+00

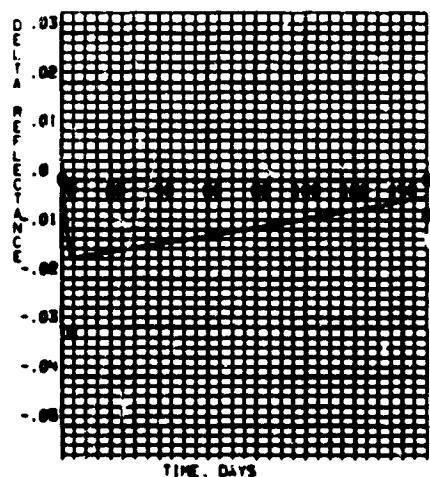
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	REFLECTANCE
	.000		.782+00
	.100-02		.771+00
	.000		.773+00
	.100-02		.773+00
	.000		.776+00
	.760+03	SAMPLE DESTROYED	
	.000		.778+00
	.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY- DELTA REFLECTANCE



ENVIRONMENT: B(2F)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Single Gold-Coated Mylar, S-G-M

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0 0
			660 (366)	240	
			530 (294)	240	
			140 (78)	240	
			37 (21)	240	
3	200°F (93°C) 40% R.H.		24		0/10**
			72		
			240		
5	95% R.H. at 55°F (35°C)		12		0.5/1**
			24		
			72		
6	95% R.H./Salt Air at 95°F (35°C)		12		20/33**
			24		
			72		
7	Water Immersion at 70°F (21°C)		0.5		0
			2		
			24		
8e, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³			0
		10 ⁻³			
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³			0
		10 ⁻³			
8g, h	95% R.H./P ₂ at 95°F (35°C)	10 ⁻³			Destroyed in environment
		760			

* See Table 5 for complete identification of test material (Volume I).
 ** Two specimens.

FLEXIBILITY TEST RESULTS

Material*: Single Gold Coated Mylar, S-G-M

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R (°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr	660 (366) 660 (366) 550 (234) 140 (78) 31 (21)	24		✓		
			240		✓		
			240				
			240				
			240				
			24				
3	200°F (93°C) 40% R.H.		72				
			240		✓		
			12				
5	95% R.H. at 95°F (35°C)		24				
			72		✓		
			12				
6	95% R.H./Salt Air at 95°F(35°C)		24				
			72		✓		
			12				
7	Water Immersion at 70°F (21°C)		24				
			72		✓		
			0.5		✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}	2		✓		
			24		✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}	100		✓		
			3600		✓		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10^{-3}	100		✓		
			3600		✓		
		760	4		✓		
			4		✓		

* See Table 5 for complete identification of test material(Volume I)

** As compared to control samples

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE GOLDIZED MYLAR

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DEG.R (365 DEG.K)

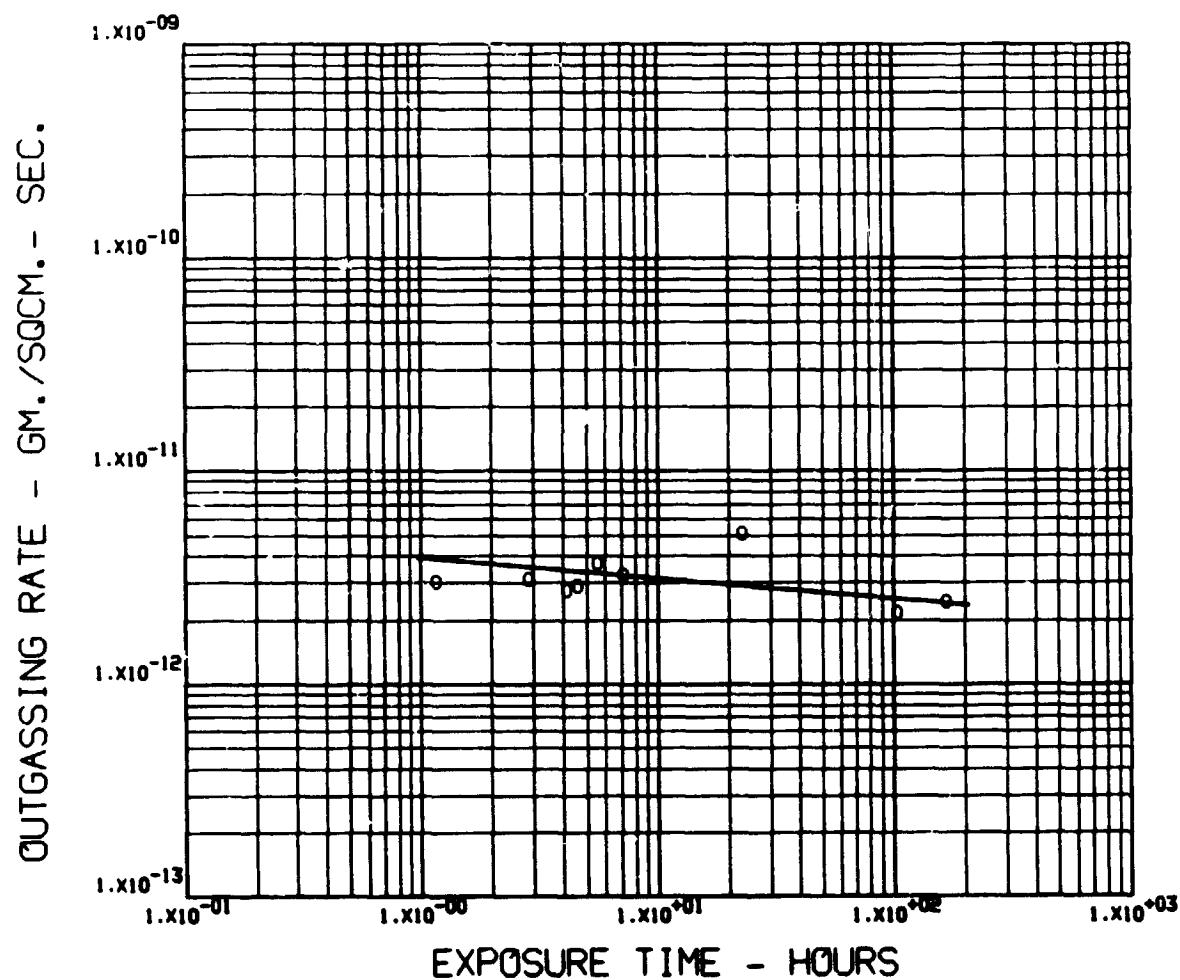
TEST DATE 042211

TEST CHAMBER NO. 4

SAMPLE WEIGHT = .8700 GMS. SAMPLE AREA = 1935. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.16	3.01-12	.25	.07	.68
2.83	3.09-12	.84	.12	.04
4.08	2.76-12	.84	.13	.03
4.58	2.86-12	.84	.12	.04
5.50	3.66-12	.85	.13	.02
7.16	3.27-12	.84	.14	.02
22.58	5.02-12	.92	.06	.02
102.91	2.16-12	.90	.07	.02
166.08	2.43-12	.93	.06	.01

PROPERTY- OUTGASSING
MATERIAL- SINGLE GOLDIZED MYLAR



ENVIRONMENT 2B VACUUM. 10-6 TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE GOLDIZED MYLAR

ENVIRONMENT 2C

VACUUM, 1.0E-06 TORR, 530 DEG.R (295 DEG.K)

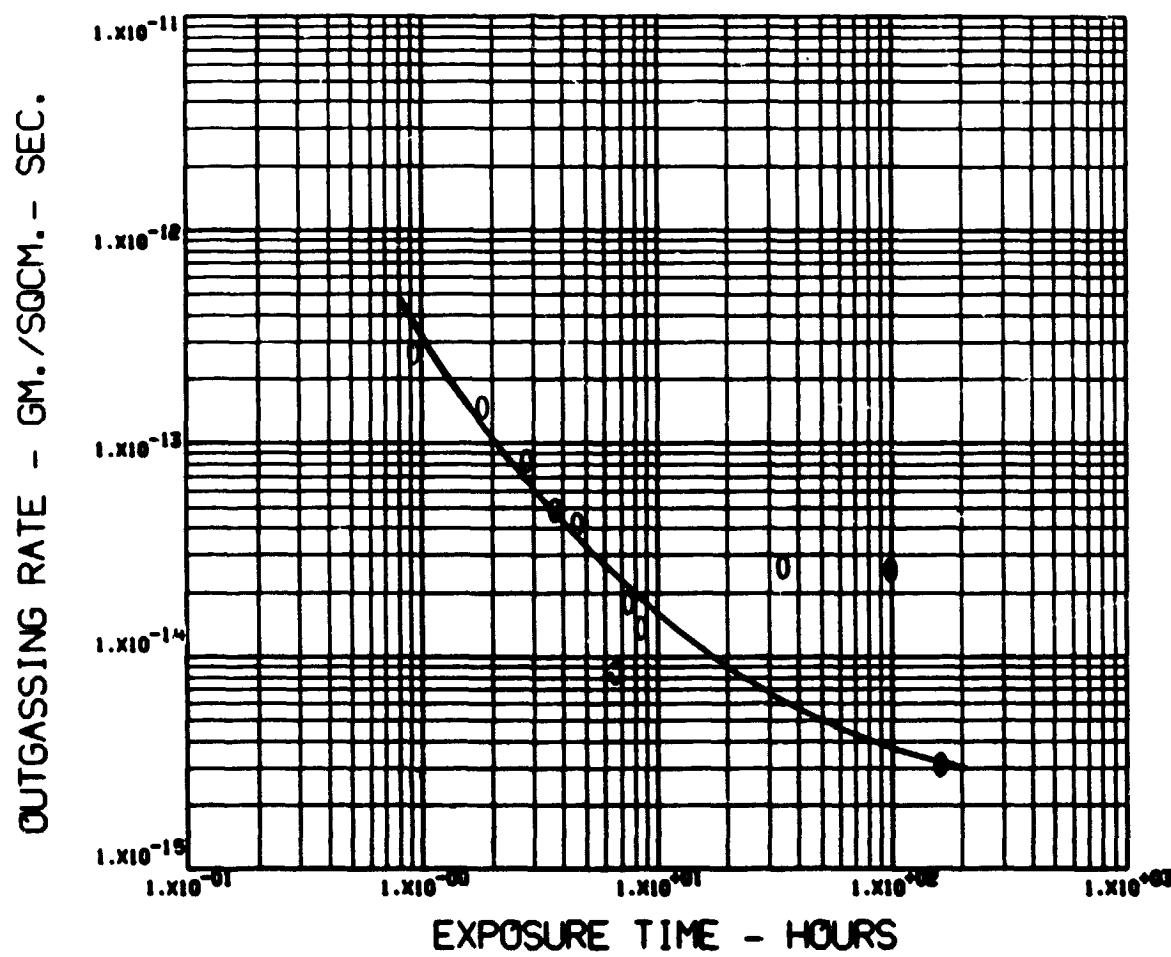
TEST DATE 020171

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .9580 GMS. SAMPLE AREA = 2128. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.92	2.94-13	.69	.27	.04
1.83	1.44-13	.72	.24	.04
2.83	8.15-14	.66	.29	.05
3.75	4.99-14	.70	.26	.04
4.75	4.22-14	.65	.30	.05
6.83	8.69-15	.68	.28	.04
7.75	1.79-14	.68	.28	.04
8.58	1.42-14	.69	.28	.04
35.50	2.74-14	.67	.29	.04
100.82	2.67-14	.59	.33	.08
167.83	3.35-15	.75	.23	.02

PROPERTY- OUTGASSING
MATERIAL- SINGLE GOLDIZED MYLAR



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (293 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE GOLDIZED MYLAR

ENVIRONMENT 4A

VACUUM, 1.0×10^{-6} TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR 4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

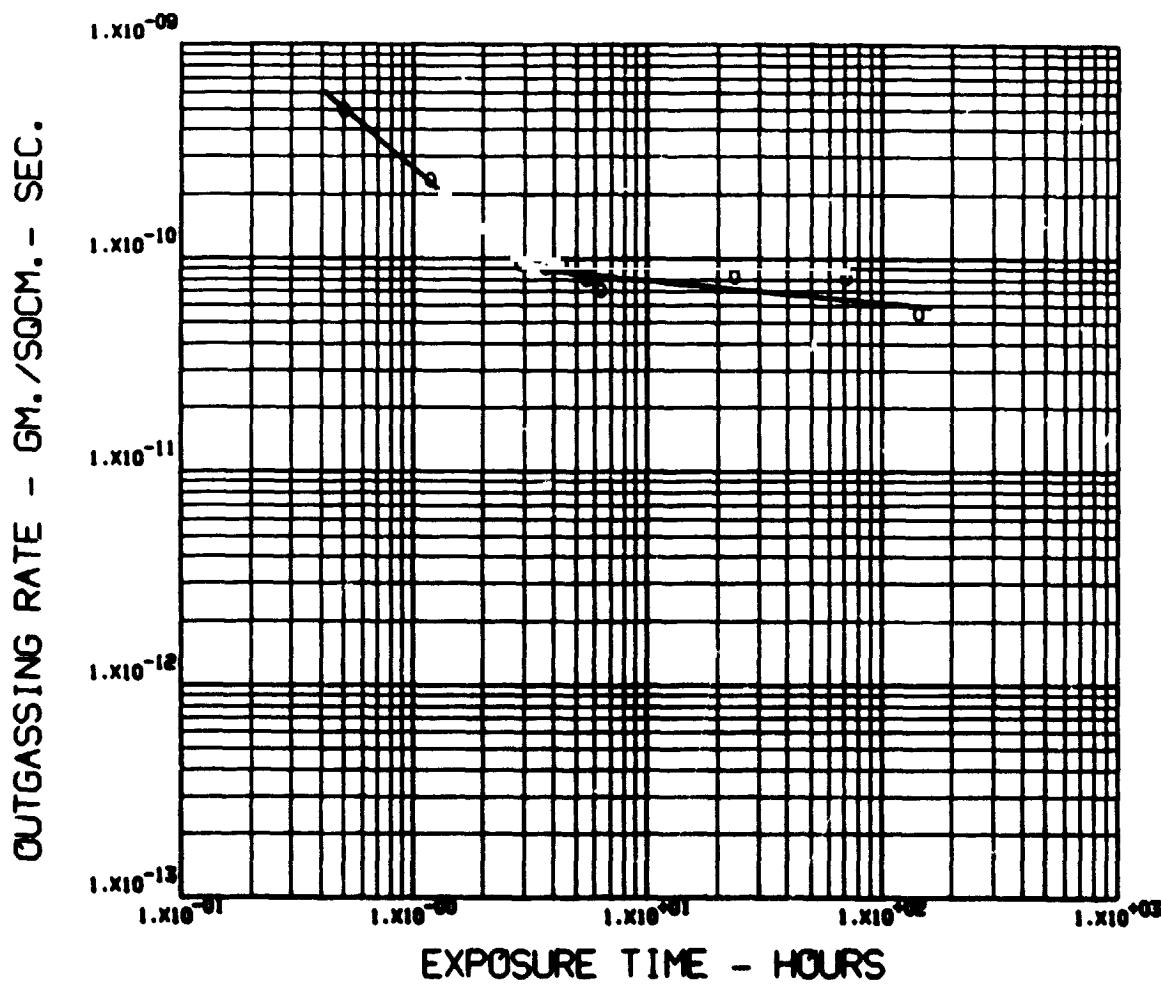
TEST DATE 051872

TEST CHAMBER NO. 4

SAMPLE WEIGHT = .9000 GMS. SAMPLE AREA = 2000. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.50	4.94-10	.81	.04	.14
1.17	2.32-10	.58	.01	.41
2.83	9.39-11	.82	.00	.18
3.67	8.99-11	.78	.00	.22
4.33	9.29-11	.38	.00	.62
5.50	7.90-11	.61	.00	.39
6.33	7.05-11	.94	.00	.06
23.50	8.26-11	.87	.00	.13
70.75	8.09-11	.94	.00	.06
142.50	5.49-11	.98	.00	.02

PROPERTY - OUTGASSING
MATERIAL - SINGLE GOLDIZED MYLAR



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR
MATERIAL - SINGLE GOLDIZED MYLAR

ENVIRONMENT 4B

VACUUM, 10E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

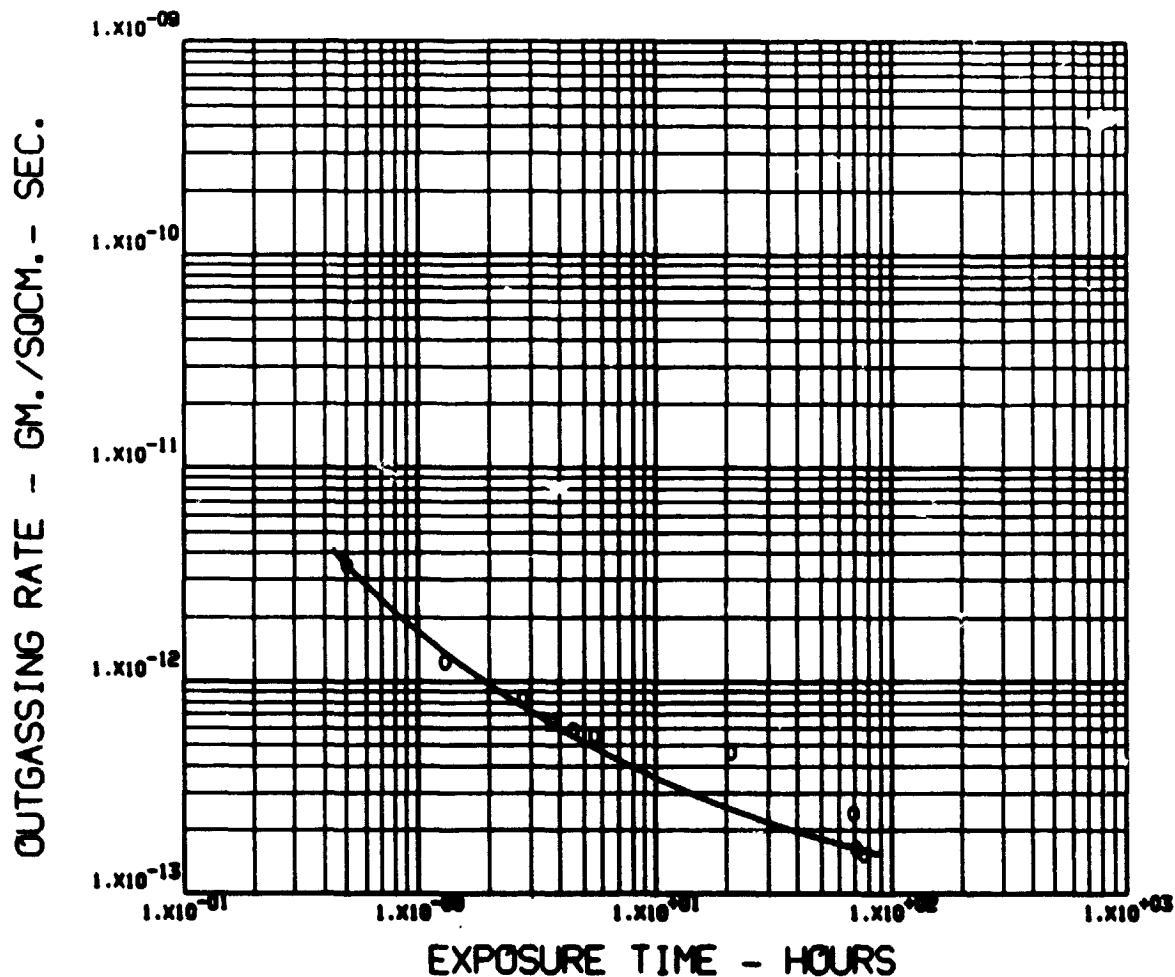
TEST DATE 052471

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .9005 GMS. SAMPLE AREA = 2001. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.50	3.46-12	.36	.41	.23
1.28	1.23-12	.37	.49	.14
2.75	8.24-13	.26	.48	.26
3.67	6.32-13	.31	.45	.24
4.50	5.83-13	.29	.49	.22
5.50	5.54-13	.32	.46	.22
20.67	4.56-13	.35	.33	.32
68.92	2.38-13	.32	.48	.20
70.92	1.61-13	.34	.50	.16
75.17	1.53-13	.27	.52	.22
140.83	5.21-14	.40	.48	.11

PROPERTY- OUTGASSING
MATERIAL- SINGLE GOLDIZED MYLAR



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -DOUBLE GOLDIZED MYLAR. 1/4 MIL
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.31850+00
	10.0	.31830+00
I	.0	.33500+00
	10.0	.33420+00
I	.0	.31200+00
	150.0	.31250+00
I	.0	.31850+00
	150.0	.31900+00

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.30250+00
	240.0	.30060+00
I	.0	.32050+00
	240.0	.31750+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.30250+00
	660.	367.	.30060+00
I	-	-	.32050+00
	660.	367.	.31750+00
I	-	-	.32350+00
	530.	294.	.32280+00
I	-	-	.31720+00
	530.	294.	.31550+00
I	-	-	.32850+00
	140.	78.	.32860+00
I	-	-	.31300+00
	140.	78.	.31320+00
I	-	-	.32000+00
	37.	21.	.32000+00
I	-	-	.30750+00
	37.	21.	.30700+00

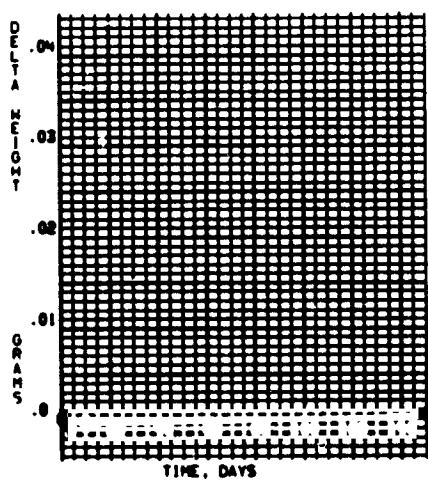
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.33460+00
	240.0	.33460+00
I	.0	.31650+00
	240.0	.31200+00

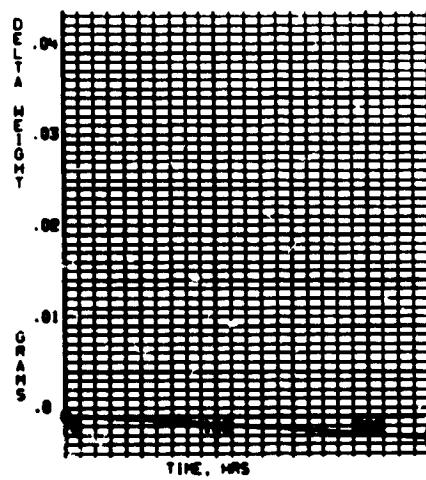
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL

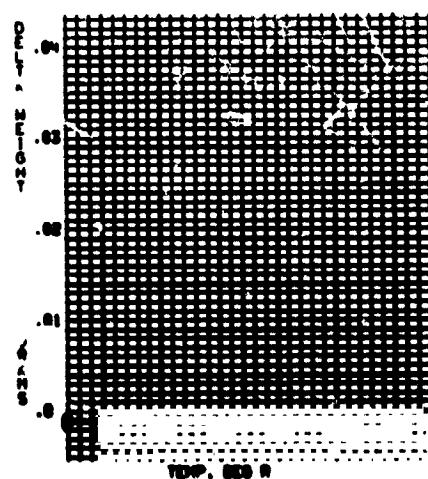
PROPERTY - DELTA HEIGHT



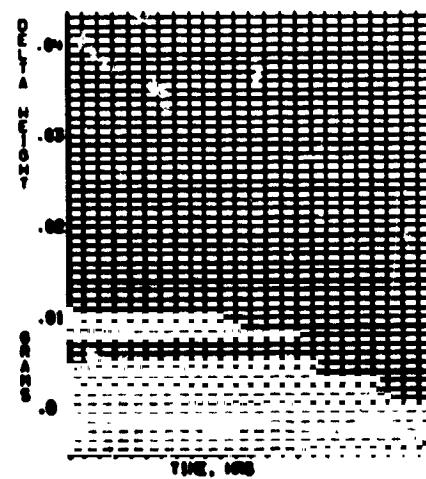
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(B)(B)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 540 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 200 F
(93 93 C) 40 PERCENT R.H.

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MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.31240+00
	12.0	.31350+00
	.0	.33150+00
	12.0	.33300+00
	.0	.32510+00
	24.0	.32700+00
	.0	.32310+00
	24.0	.32300+00
	.0	.30750+00
	72.0	.30670+00
	.0	.31380+00
	72.0	.31330+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.32850+00
	12.0	.37300+00
	.0	.30560+00
	12.0	.33950+00
	.0	.30500+00
	24.0	.32200+00
	.0	.32600+00
	24.0	.33400+00
	.0	.32700+00
	72.0	.35550+00
	.0	.32350+00
	72.0	.35850+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

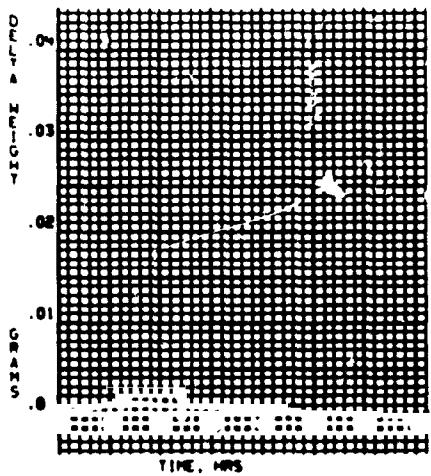
F	HOURS	GRAMS
	.0	.31270+00
	.5	.31310+00
	.0	.31550+00
	.5	.31550+00
	.0	.33310+00
	2.0	.33300+00
	.0	.31600+00
	2.0	.31570+00
	.0	.33140+00
	24.0	.33170+00
	.0	.31750+00
	24.0	.31740+00

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.31570+00
	150.0	.31550+00
	.0	.32150+00
	150.0	.32150+00

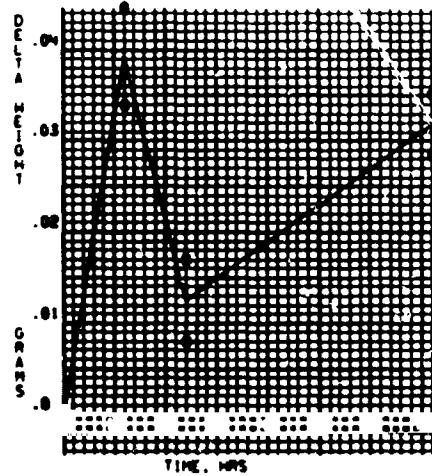
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- DOUBLE GOLDIZED MYLAR, 1/4 MIL

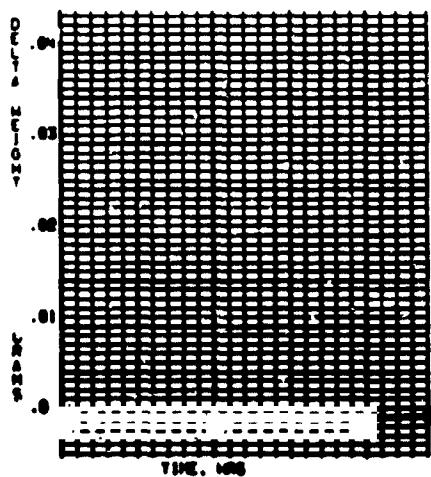


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

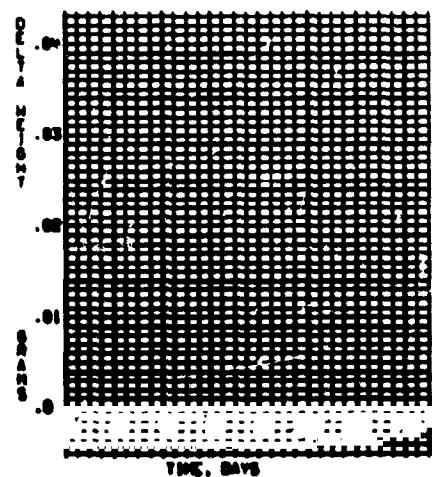
PROPERTY- DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
SALT SPRAY TEST, 70 DEG F
(21 DEG C) 1.5-03 TEST

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	UAYS	GRAMS
I	.0	.32400+00
	150.0	.32500+00
I	.0	.33710+00
	150.0	.33750+00

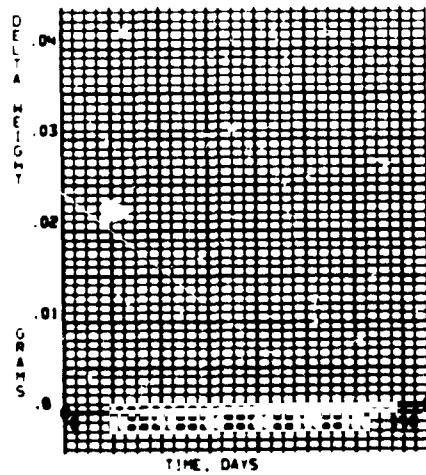
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	F	P.P. TORR	GRAMS
I	.000		.31750+00
	.100-02		.31850+00
I	.000		.31700+00
	.100-02		.31750+00
I	.000		.33580+00
	.760+03		.34150+00
I	.000		.31520+00
	.760+03		.31800+00

NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: DOUBLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY: DELTA WEIGHT



ENVIRONMENT: B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 1			ENVIRONMENT 2 (AH)				
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)				
F	DAYS	LB/IN	N/M	F	HOURS	LB/IN	N/M
.0		.360+01	.631+03				
.0		.370+01	.648+03	240.0		.444+01	.778+03
10.0		.416+01	.729+03	240.0		.448+01	.785+03
10.0		.454+01	.795+03				
150.0		.474+01	.831+03				
150.0		.414+01	.725+03				

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

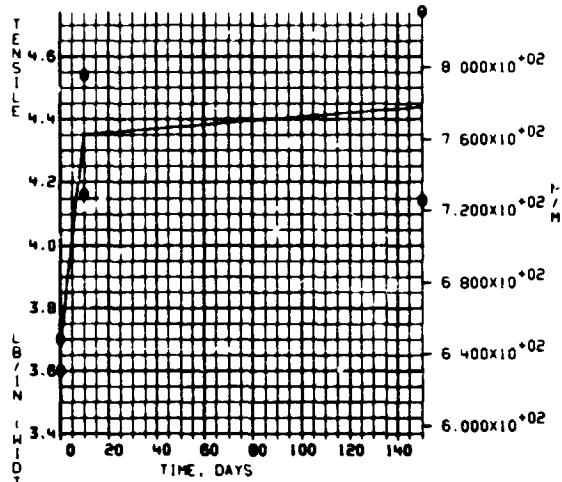
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	DEG R	DEG K	LB/IN	N/M	F	HOURS	LB/IN	N/M
660.	367.		.444+01	.778+03			.406+01	.711+03
660.	367.		.448+01	.785+03	240.0		.414+01	.725+03
530.	294.		.448+01	.785+03				
530.	294.		.414+01	.725+03				
140.	78.		.446+01	.781+03				
140.	78.		.450+01	.788+03				
37.	21.		.380+01	.666+03				
37.	21.		.404+01	.708+03				

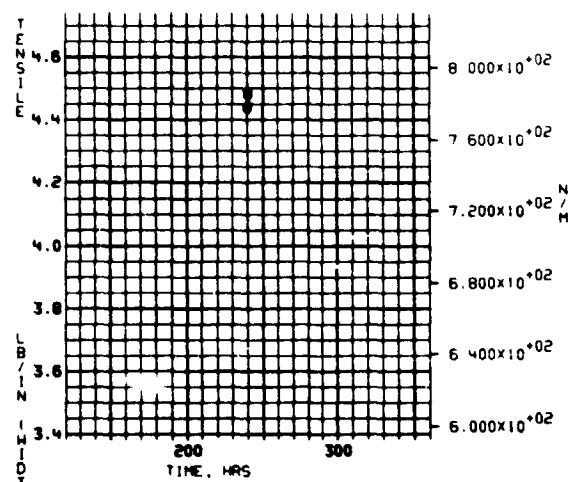
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL

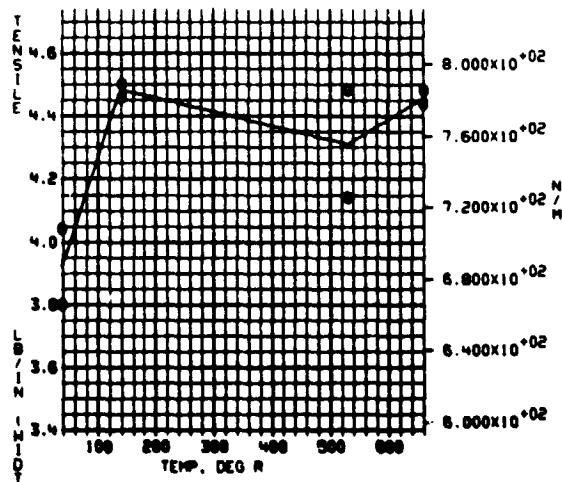
PROPERTY - TENSILE



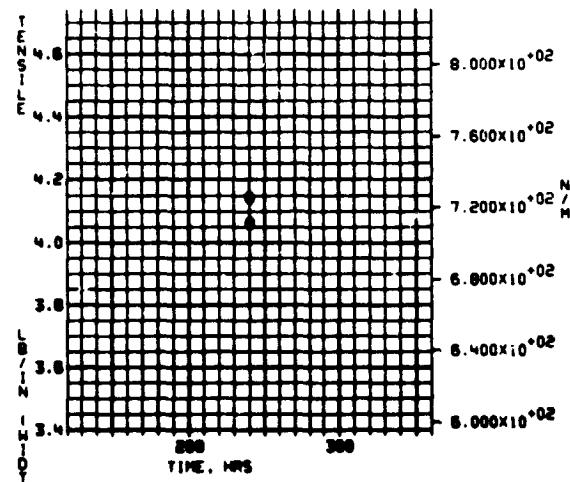
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-05 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.406+01	.711+03
	12.0	.418+01	.732+03
	24.0	.376+01	.659+03
	24.0	.402+01	.704+03
	72.0	.388+01	.680+03
	72.0	.384+01	.673+03

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.396+01	.694+03
	12.0	.450+01	.788+03
	24.0	.404+01	.708+03
	24.0	.384+01	.673+03
	72.0	.416+01	.729+03
	72.0	.430+01	.753+03

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

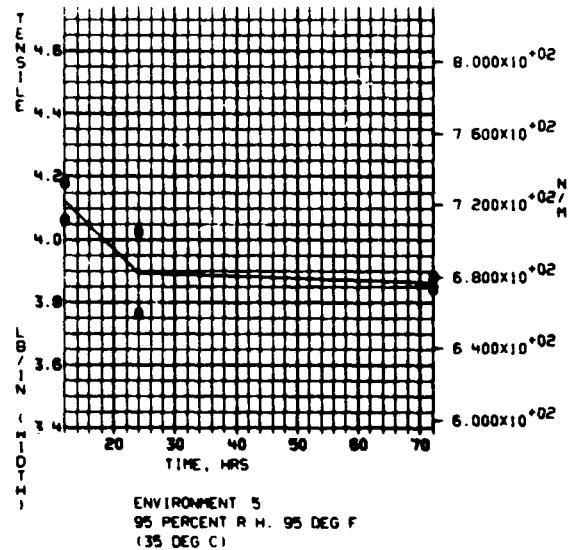
F	HOURS	LB/IN	N/M
	.5	.384+01	.673+03
	.5	.340+01	.596+03
	2.0	.446+01	.781+03
	2.0	.338+01	.592+03
	24.0	.408+01	.715+03
	24.0	.380+01	.666+03

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

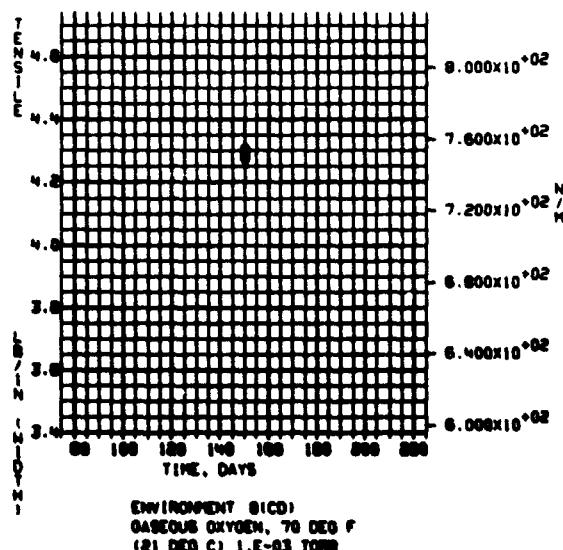
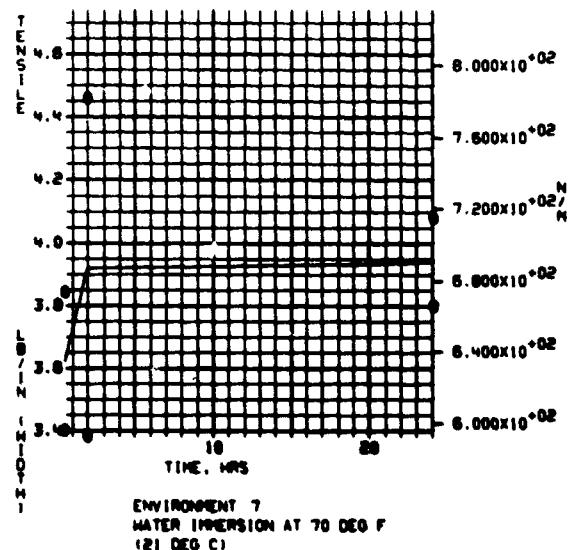
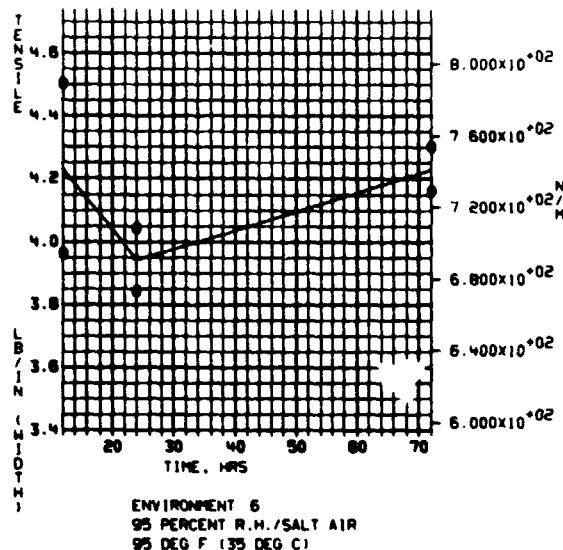
F	DAYs	LB/IN	N/M
	150.0	.428+01	.750+03
	150.0	.430+01	.753+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL



PROPERTY - TENSILE



MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

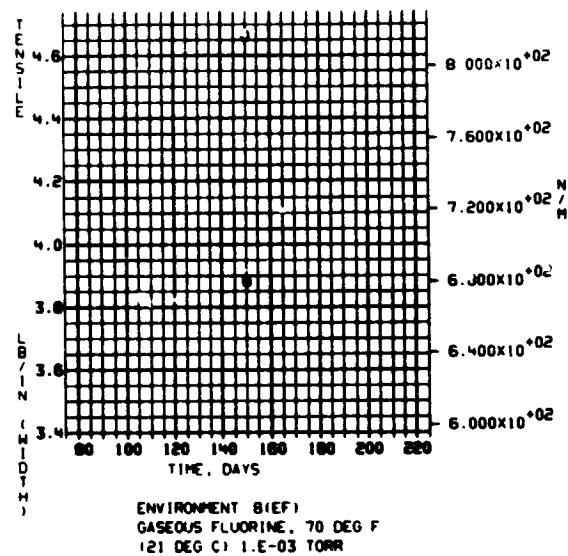
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	DAYS	LB/IN	N/M	F	F	P.P. TORR	LB/IN	N/M
	150.0	.388+01	.680+03		.100-02		.400+01	.701+03
	150.0	.466+01	.816+03		.100-02		.338+01	.592+03
					.760+03		.384+01	.673+03
					.760+03		.414+01	.725+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- DOUBLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY TENSILE



MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE (SIDE L)

ENVIRONMENT 1			ENVIRONMENT 2 (AB)		
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DAYS	EMITTANCE	F	HOURS	EMITTANCE
I	.0	.210-01	I	.0	.230-01
I	10.0	.200-01	I	240.0	.150-01
I	.0	.230-01	I	.0	.200-01
I	10.0	.220-01	I	240.0	.200-01
I	.0	.270-01			
I	150.0	.320-01			
I	.0	.200-01			
I	150.0	.290-01			

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

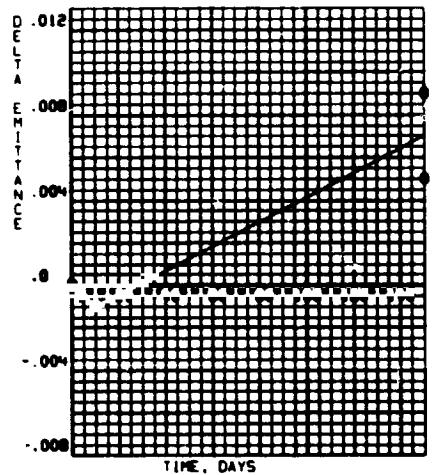
F	DEG R	DEG K	EMITTANCE
I	-	-	.230-01
I	660.	367.	.150-01
I	-	-	.200-01
I	660.	367.	.200-01
I	-	-	.240-01
I	530.	294.	.230-01
I	-	-	.220-01
I	530.	294.	.210-01
I	-	-	.280-01
I	140.	78.	.240-01
I	-	-	.220-01
I	140.	78.	.230-01
I	-	-	.210-01
I	37.	21.	.210-01
I	-	-	.210-01
I	37.	21.	.200-01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.210-01
I	240.0	.210-01
I	.0	.200-01
I	240.0	.210-01

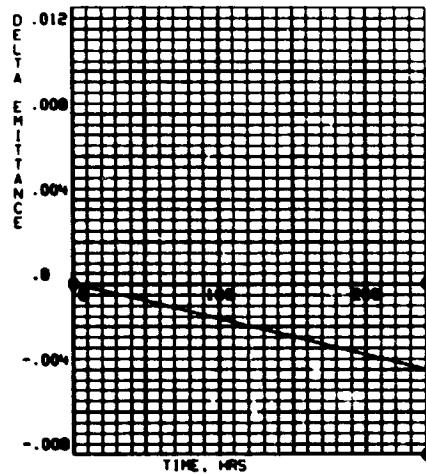
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC, IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- DOUBLE GOLDIZED MYLAR, 1/4 MIL

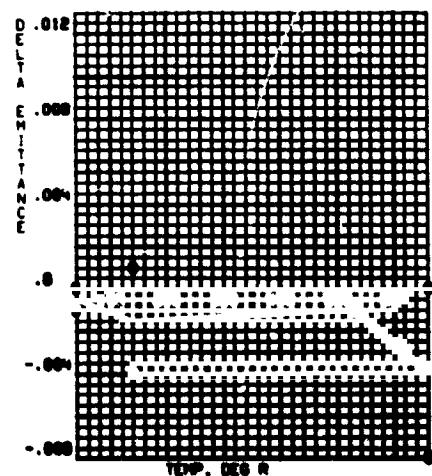


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

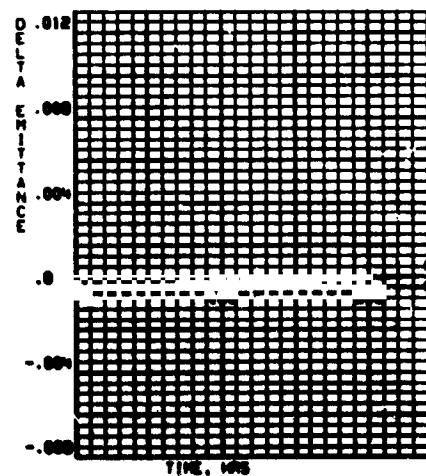
PROPERTY- DELTA EMITTANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -EMITTANCE (SIDE L)

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	EMITTANCE
	.0	.260-01
	12.0	.200-01
	.0	.220-01
	12.0	.180-01
	.0	.190-01
	24.0	.180-01
	.0	.190-01
	24.0	.180-01
	.0	.210-01
	72.0	.220-01
	.0	.190-01
	72.0	.210-01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
	.0	.230-01
	12.0	.240-01
	.0	.230-01
	12.0	.230-01
	.0	.240-01
	24.0	.230-01
	.0	.200-01
	24.0	.220-01
	.0	.220-01
	72.0	.350-01
	.0	.220-01
	72.0	.230-01

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

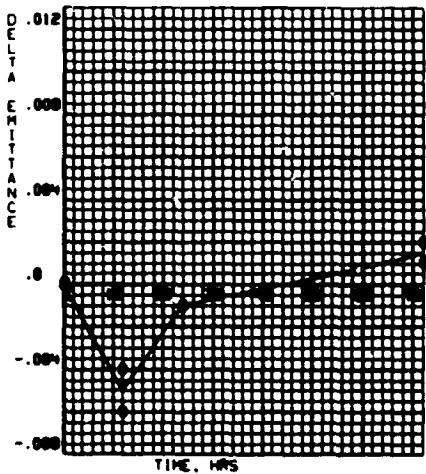
F	HOURS	EMITTANCE
	.0	.220-01
	.5	.230-01
	.0	.240-01
	.5	.220-01
	.0	.230-01
	2.0	.220-01
	.0	.200-01
	2.0	.170-01
	.0	.200-01
	24.0	.230-01
	.0	.210-01
	24.0	.200-01

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.220-01
	150.0	.270-01
	.0	.220-01
	150.0	.230-01

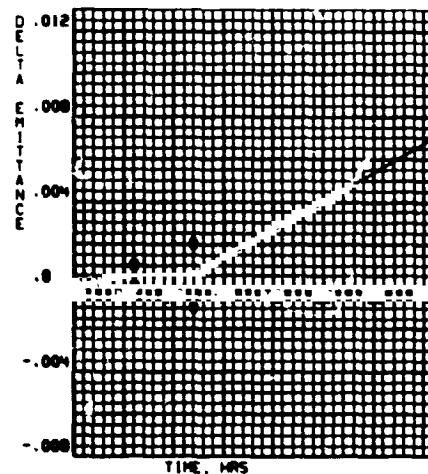
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL

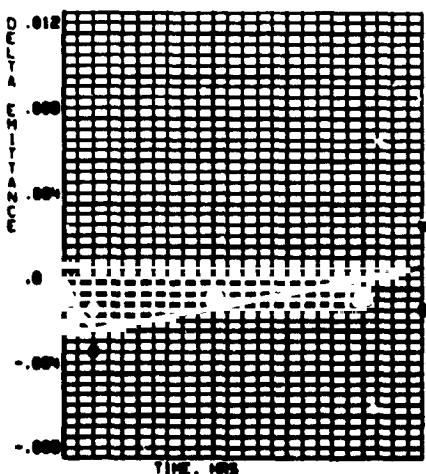


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

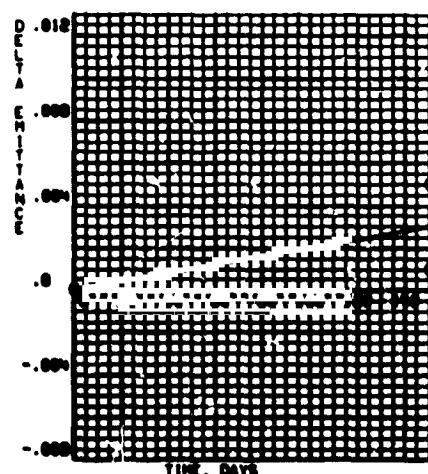
PROPERTY - DELTA EMITTANCE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
JACQUES OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DOUBLE GOLDIZED MYLAR. 1/4 MIL
PROPERTY -EMITTANCE (SIDE L)

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINF
MIXTURE AT 95 DEG F(35 DEG C).4 HR

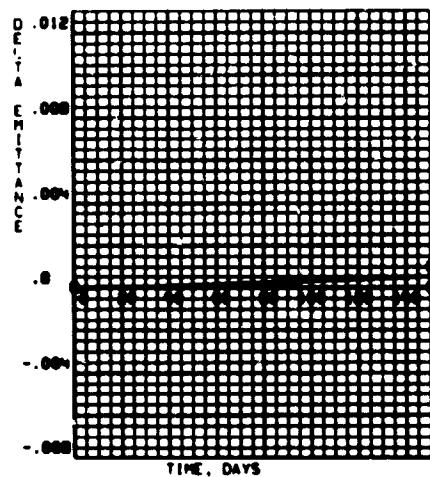
F	DAYS	EMITTANCE
	.0	.210-01
	150.0	.210-01
	.0	.200-01
	150.0	.210-01

F	F	P.P., TORR	EMITTANCE
	.000		.210-01
	.100-02		.270-01
	.000		.190-01
	.100-02		.230-01
	.000		.200-01
	.760+03		.270-01
	.000		.230-01
	.760+03		.240-01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL

PROPERTY - DELTA EMITTANCE



ENVIRONMENT (IEFI)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPFRTY -EMITTANCE (SIDE O)

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
	.0	.220-01
	10.0	.190-01
	.0	.230-01
	10.0	.240-01
	.0	.220-01
	150.0	.310-01
	.0	.210-01
	150.0	.290-01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	EMITTANCE
	.0	.230-01
	240.0	.160-01
	.0	.220-01
	240.0	.180-01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

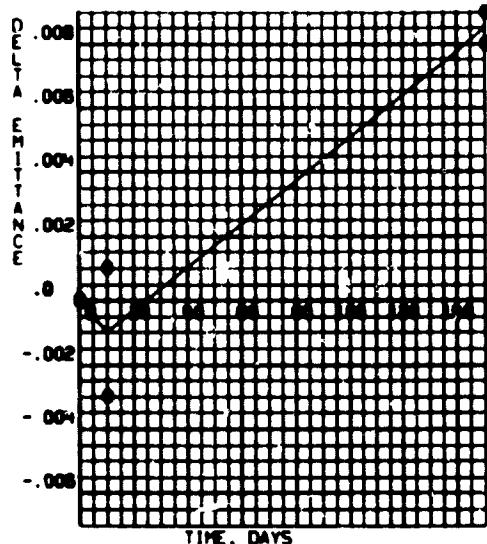
F	DEG R	DEG K	EMITTANCE
	-	-	.230-01
	660.	367.	.160-01
	-	-	.220-01
	660.	367.	.180-01
	-	-	.250-01
	530.	294.	.220-01
	-	-	.230-01
	530.	294.	.210-01
	-	-	.220-01
	140.	78.	.210-01
	-	-	.240-01
	140.	78.	.220-01
	-	-	.210-01
	37.	21.	.210-01
	-	-	.210-01
	37.	21.	.200-01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
	.0	.210-01
	240.0	.200-01
	.0	.190-01
	240.0	.210-01

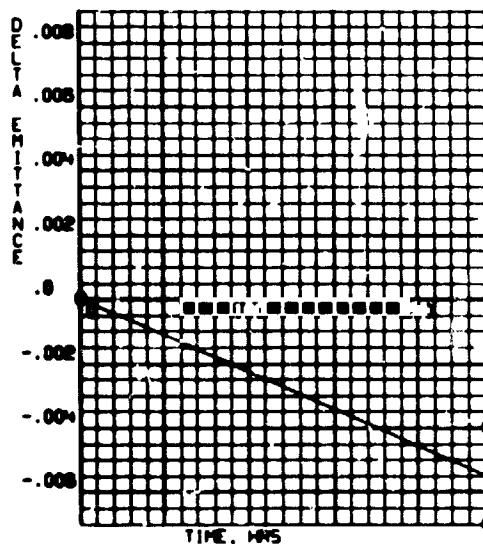
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL II)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 1/4 MIL

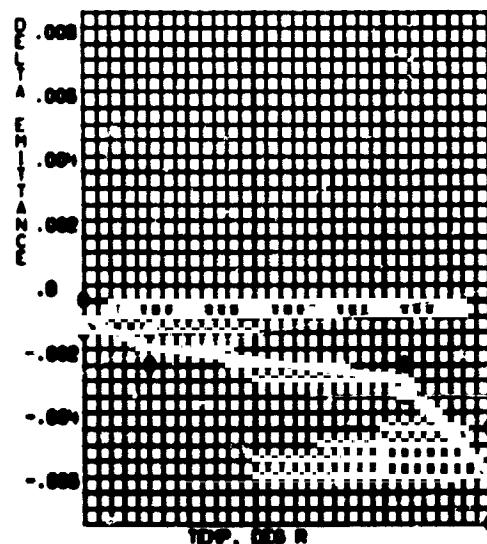


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

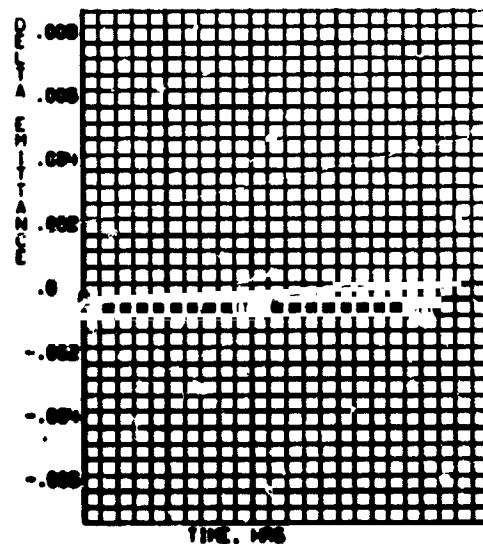
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
 PROPERTY -EMITTANCE (SIDE 0)

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	EMITTANCE
	.0	.240-01
	12.0	.180-01
	.0	.220-01
	12.0	.190-01
	.0	.200-01
	24.0	.200-01
	.0	.200-01
	24.0	.200-01
	.0	.200-01
	72.0	.210-01
	.0	.190-01
	72.0	.220-01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
	.0	.280-01
	12.0	.220-01
	.0	.230-01
	12.0	.260-01
	.0	.220-01
	24.0	.210-01
	.0	.220-01
	24.0	.240-01
	.0	.200-01
	72.0	.230-01
	.0	.190-01
	72.0	.220-01

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	EMITTANCE
	.0	.210-01
	.5	.220-01
	.0	.230-01
	.5	.230-01
	.0	.200-01
	2.0	.200-01
	.0	.200-01
	2.0	.170-01
	.0	.200-01
	24.0	.210-01
	.0	.200-01
	24.0	.190-01

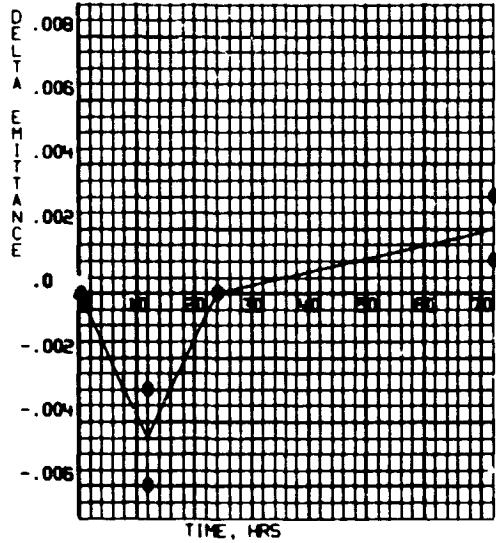
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.200-01
	150.0	.260-01
	.0	.210-01
	150.0	.250-01

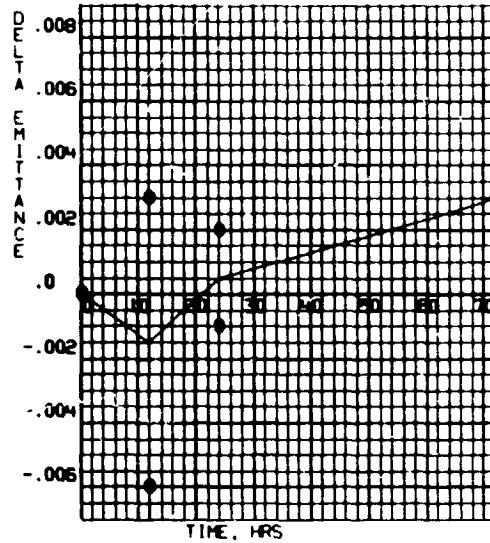
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: POLY(1,4-DIETHYL-BUTYLICARBOXYLIC ACID), 1.4 MIL

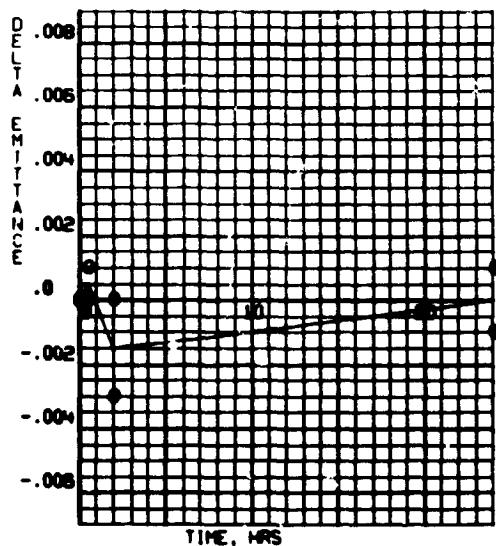
EXHIBIT 14 - FIGURE 17



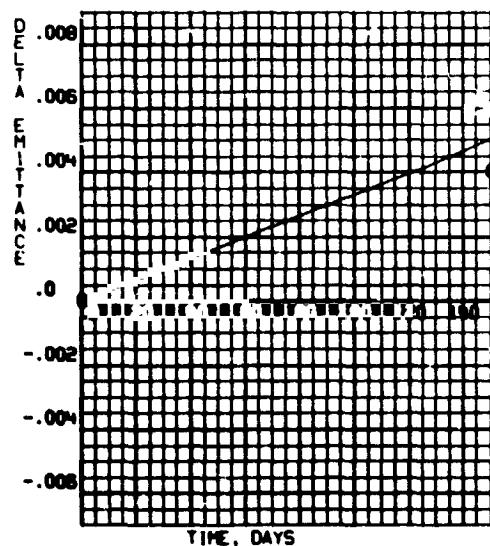
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DOUBLE GOLDIZED MYLAR, 1/4 MIL
PROPERTY -EMITTANCE (SIDE O)

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.210-01
	150.0	.210-01
I	.0	.190-01
	150.0	.220-01

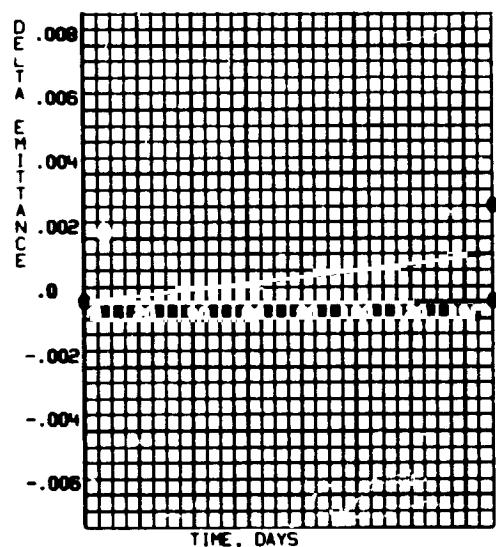
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P.	TORR	EMITTANCE
I	.000			.210-01
	.100-02			.270-01
I	.000			.200-01
	.100-02			.240-01
I	.000			.200-01
	.760+03			.300-01
I	.000			.230-01
	.760+03			.290-01

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +-03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DOUBLE GOLDIZED MYLAR, 14 MIL

PROPERTY - DELTA EMITTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Double Gold-Coated Mylar, D-G-M

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr		660 (366)	24	0
			660 (366)	240	
			530 (294)	240	
			140 (78)	240	
			37 (21)	240	
3	200°F (93°C) 40% R.H.			24	0
				72	
				240	
5	95% R.H. at 95°F (35°C)			12	0
				24	
				72	
6	95% R.H./Salt Air at 95°F(35°C)			12	0
				24	
				72	
7	Water Immersion at 70°F (21°C)			0.5	0
				2	
				24	
8c, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}		100	0
				3600	
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}		100	0
				3600	
11	95% R.H./F ₂ at 95°F (35°C)	10^{-3}		4	0 (substrate rippled easily)
				760	

* See Table 5 for complete identification of test material (Volume I).

**Two specimens, one measurement each side.

FLEXIBILITY TEST RESULTS

Material*: Double Gold-Coated Mylar, D-G-M

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R(°K)	TIME, HR	NO EFFECT **	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr	660 (366) 660 (366) 530 (294) 140 (78) 37 (21)	24 240 240 240 240	24			
					✓		
					✓		
					✓		
					✓		
3	200°F (93°C) 40% R.H.		24 72 240	24			
					✓		
5	95% R.H. at 95°F (35°C)		12 24 72	12	✓		
					✓		
					✓		
6	95% R.H./Salt Air at 95°F(35°C)		12 24 72	12	✓		
					✓		
					✓		
7	Water Immersion at 70°F (21°C)		0.5 2 24	0.5	✓		
					✓		
					✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³ 10 ⁻³	100 3600	100			
					✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³ 10 ⁻³	100 3600	100			
					✓		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³	4 760	4	✓		
					✓		
					✓ (Substrate ripped easily)		

* See Table 5 for complete identification of test material(Volume I)

** As compared to control samples

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DOUBLE GOLDIZED NYLAR

ENVIRONMENT 2A

VACUUM, 10^{-6} TORR, 660 DEG.R (365 DEG.K)

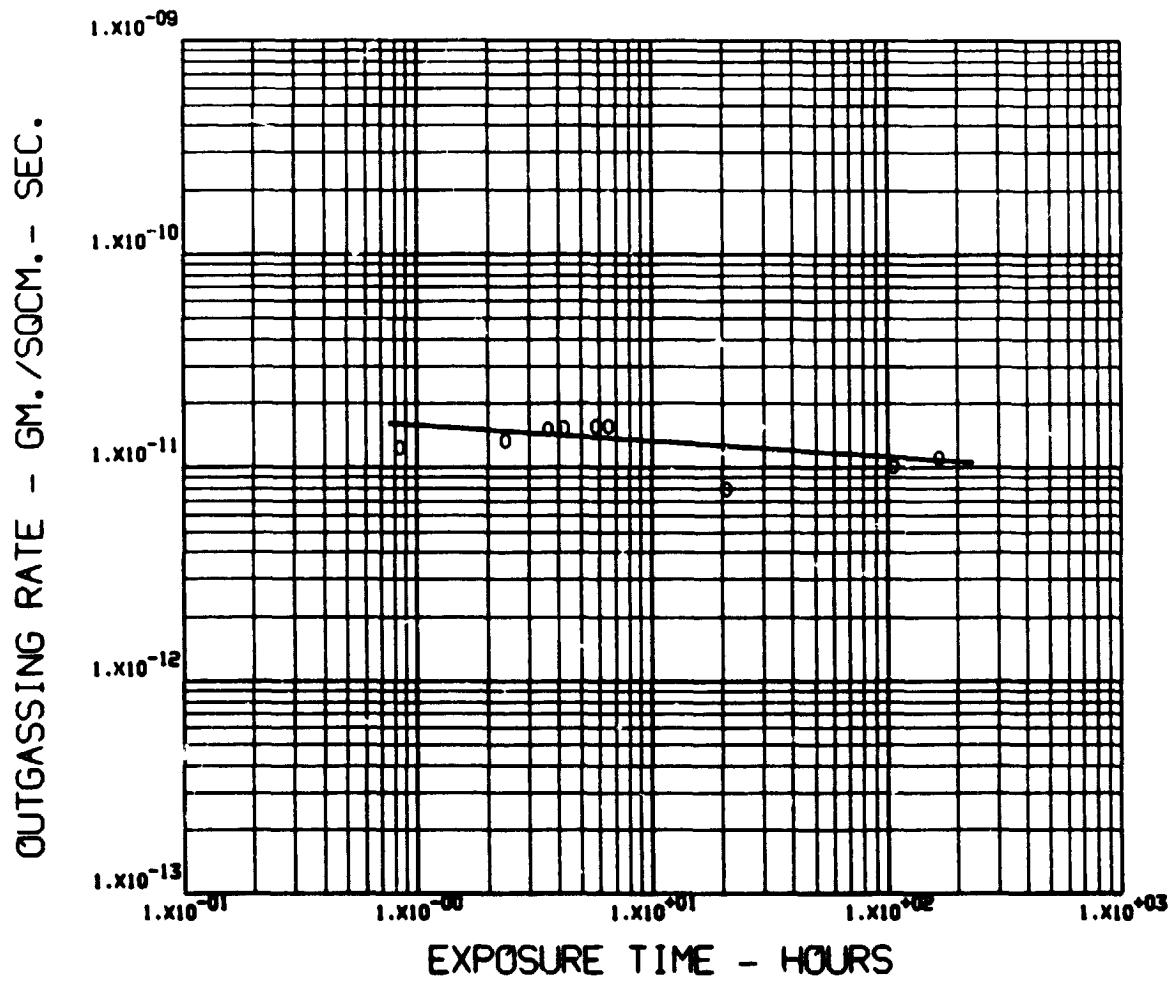
TEST DATE 032571

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.0630 GMS. SAMPLE AREA = 1935. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.83	1.23-11	.00	.00	1.00
2.33	1.32-11	.11	.00	.89
3.58	1.49-11	.00	.00	1.00
4.20	1.51-11	.00	.00	1.00
5.75	1.55-11	.00	.00	1.00
6.50	1.56-11	.00	.00	.99
20.66	7.88-12	.93	.06	.02
105.90	1.00-11	.90	.07	.02
165.05	1.11-11	.12	.87	.00

PROPERTY - OUTGASSING
MATERIAL - DOUBLE GOLDIZED MYLAR



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DOUBLE GOLDIZED NYLAR

ENVIRONMENT 2C

VACUUM, 1.0E-06 TORR, 530 DEG.R (295 DEG.K)

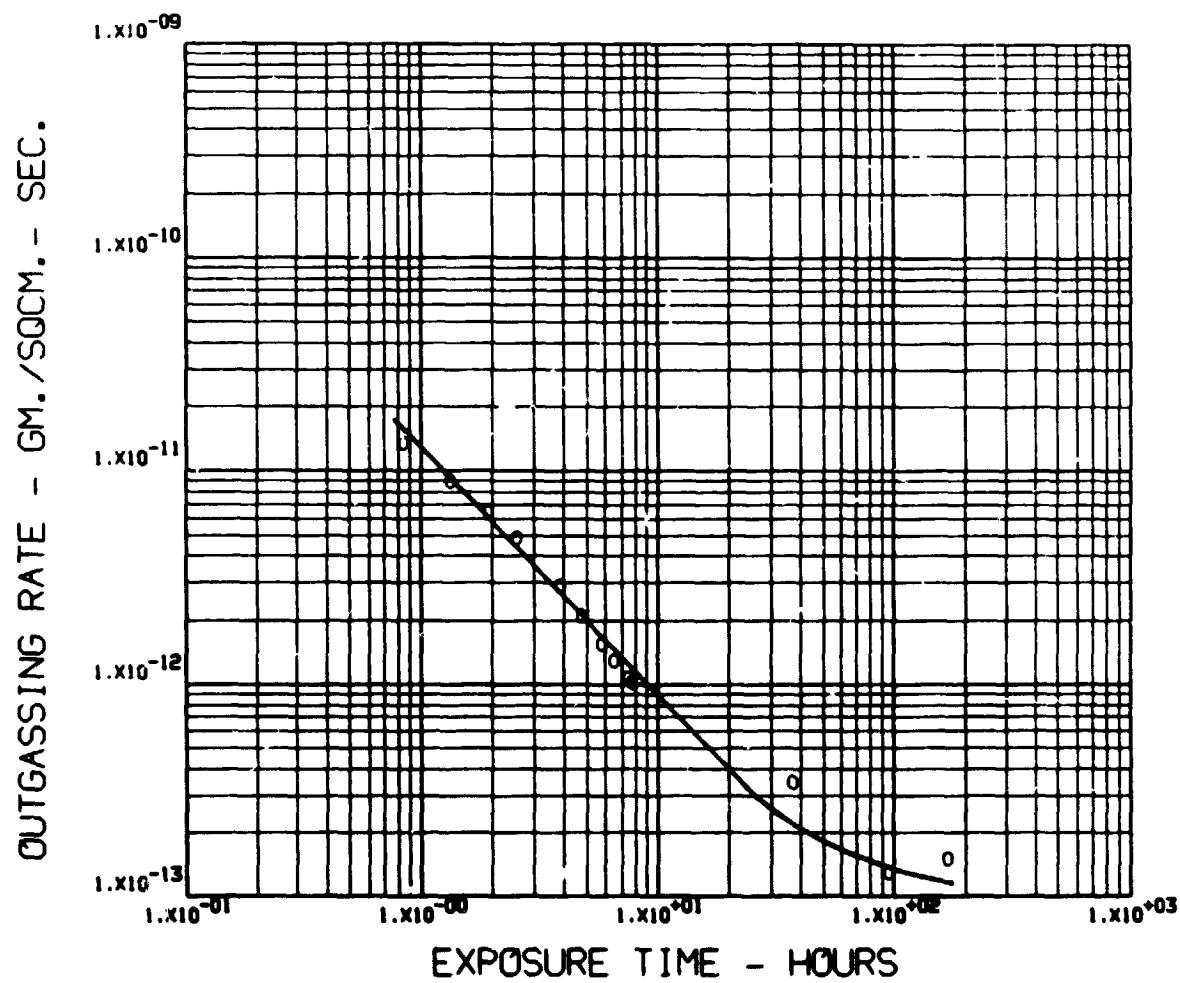
TEST DATE 020271

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.2080 GMS. SAMPLE AREA = 2195. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.83	1.35-11	.89	.10	.01
1.33	8.89-12	.86	.13	.01
1.92	6.38-12	.83	.16	.01
2.50	4.83-12	.81	.18	.01
3.83	2.88-12	.75	.23	.02
4.70	2.09-.2	.73	.25	.02
5.70	1.54-12	.69	.29	.02
6.50	1.28-12	.69	.29	.02
7.38	1.07-12	.65	.32	.03
7.75	1.02-12	.63	.34	.03
36.63	3.45-13	.22	.66	.12
95.58	1.28-13	.26	.57	.07
167.17	1.49-13	.22	.17	.61

PROPERTY- OUTGASSING
MATERIAL- DOUBLE GOLDIZED MYLAR



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR
MATERIAL - DOUBLE GOLDIZED MYLAR

ENVIRONMENT 4A

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

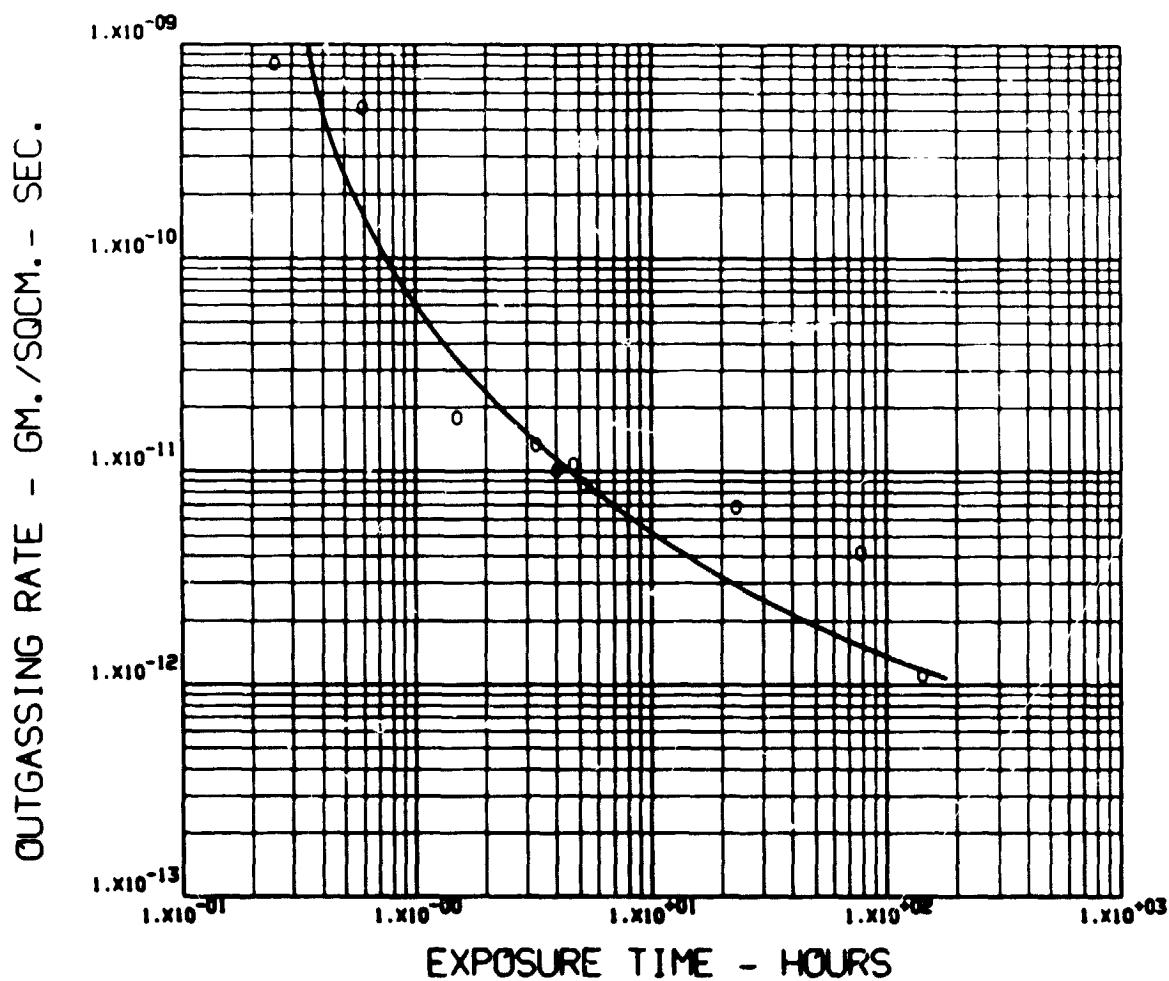
TEST DATE 050972

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.0760 GMS. SAMPLE AREA = 1956. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.25	8.08-10	.31	.00	.69
.58	5.06-10	.15	.00	.84
1.50	1.79-11	.50	.00	.50
3.25	1.33-11	.09	.00	.90
4.00	1.01-11	.47	.00	.53
4.67	1.08-11	.26	.00	.74
5.17	8.66-12	.64	.00	.36
5.75	8.41-12	.58	.00	.42
23.00	6.73-12	.69	.00	.31
77.25	4.15-12	.71	.00	.29
142.42	1.09-12	.70	.00	.30

PROPERTY- OUTGASSING
MATERIAL- DOUBLE GOLDIZED MYLAR



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DOUBLE GOLDIZED NYLAR

ENVIRONMENT 4B

VACUUM, TUE=06 TORR, 660 DEG.P.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DFG.K)

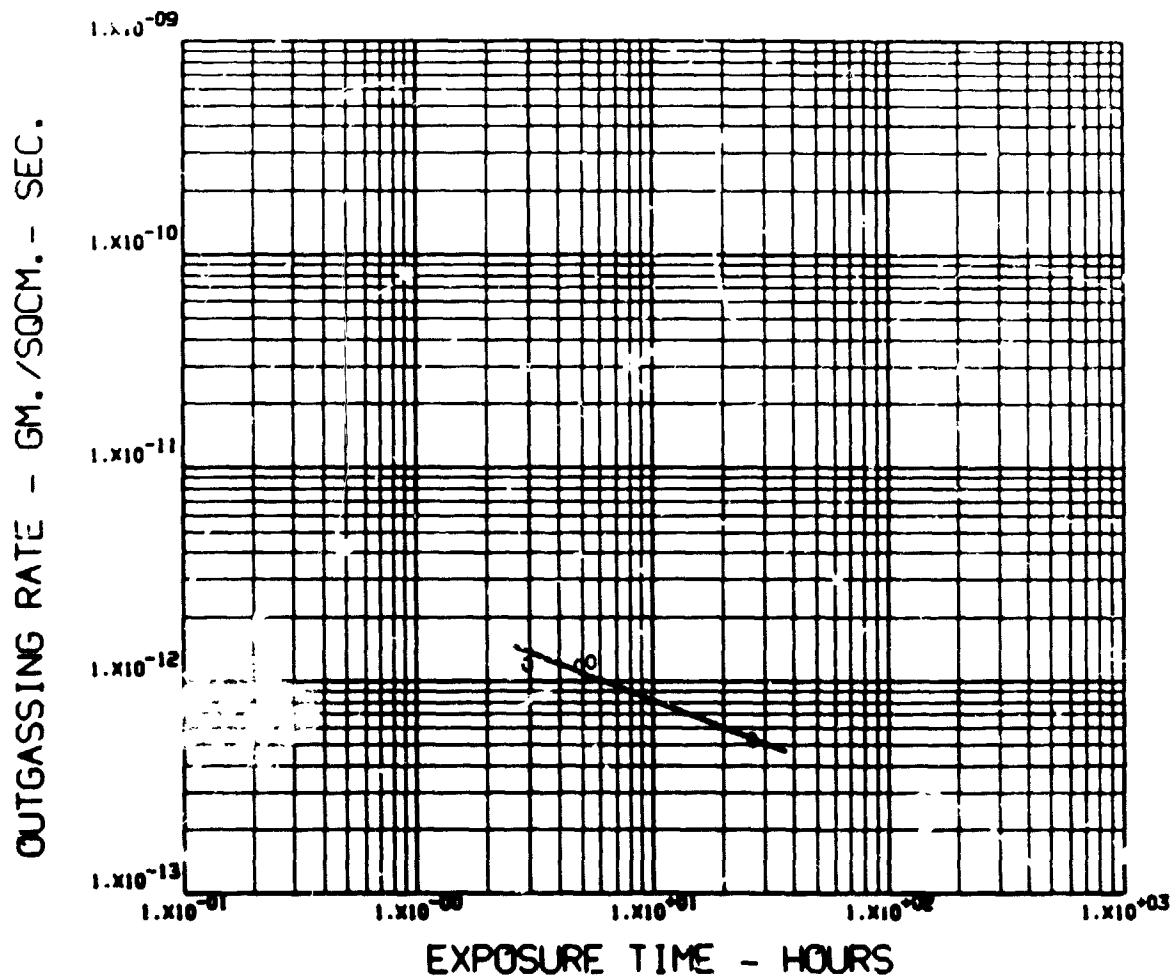
TEST DATE 052071

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.0755 GMS. SAMPLE AREA = 1957. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.92	1.19-12	.25	.46	.29
4.83	1.17-12	.26	.39	.35
5.42	1.22-12	.21	.39	.40
26.33	5.24-13	.11	.70	.19

PROPERTY - OUTGASSING
MATERIAL - DOUBLE GOLDIZED MYLAR



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
	.0	.31820+00
	10.0	.32180+00
	.0	.34830+00
	10.0	.35150+00
	.0	.32290+00
	150.0	.32550+00
	.0	.31950+00
	150.0	.32000+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
	.0	.32800+00
	240.0	.32700+00
	.0	.34320+00
	240.0	.34150+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

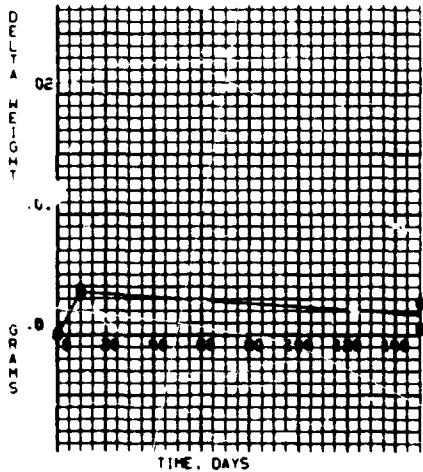
F	DEG R DEG :	GRAMS
	- -	.32800+00
	660. 367.	.32700+00
	- -	.34320+00
	660. 367.	.34150+00
	- -	.32540+00
	530. 294.	.32400+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
	.0	.32310+00
	24.0	.32000+00
	.0	.32360+00
	24.0	.32400+00
	.0	.34300+00
	72.0	.34750+00
	.0	.31930+00
	72.0	.31930+00
	.0	.32430+00
	240.0	.31450+00
	.0	.35100+00
	240.0	.35000+00

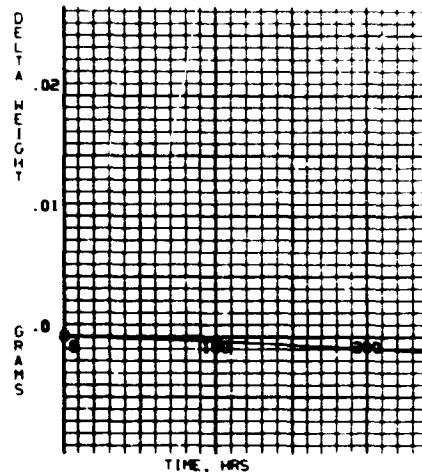
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

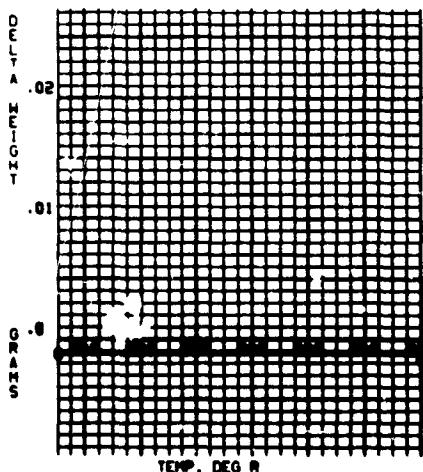


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

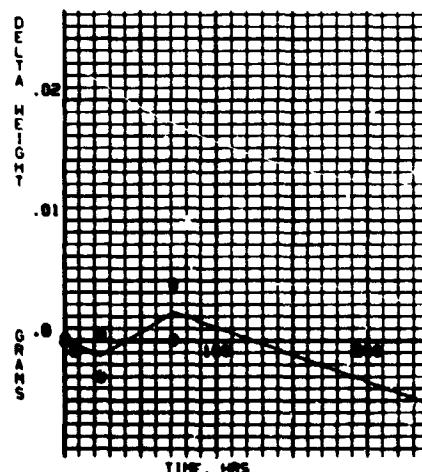
PROPERTY - DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CODE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.32350+00
	72.0	.32350+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.35000+00
	72.0	.37250+00
	.0	.32720+00
	72.0	.35450+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

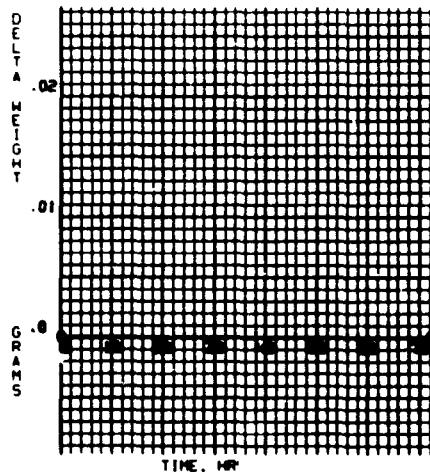
F	HOURS	GRAMS
	.0	.34500+00
	.5	.34600+00
	.0	.32320+00
	.5	.32400+00
	.0	.32150+00
	2.0	.32140+00
	.0	.32670+00
	2.0	.32760+00
	.0	.35100+00
	24.0	.35150+00
	.0	.32420+00
	24.0	.32550+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.34940+00
	150.0	.35250+00
	.0	.32580+00
	150.0	.32850+00

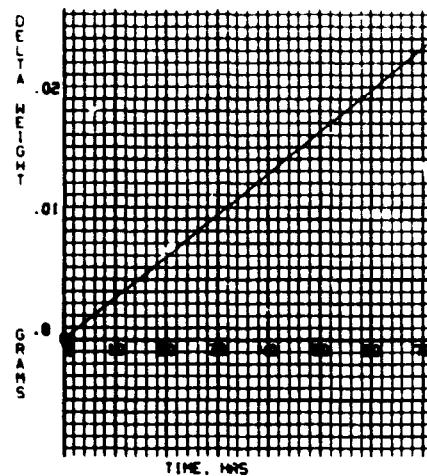
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

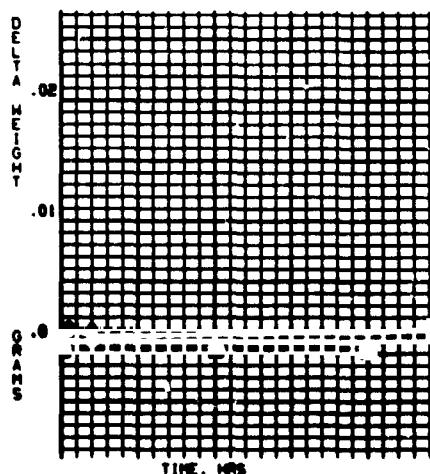


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

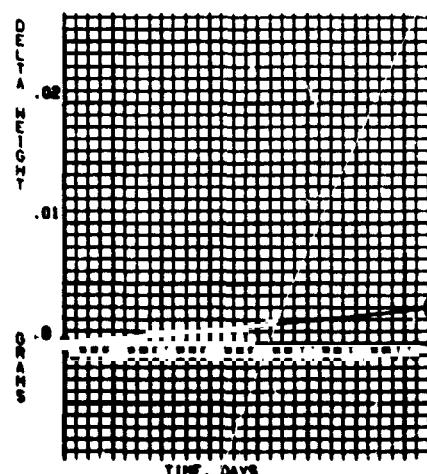
PROPERTY- DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.32450+00
	150.0	.33150+00
	.0	.32000+00
	150.0	.32750+00

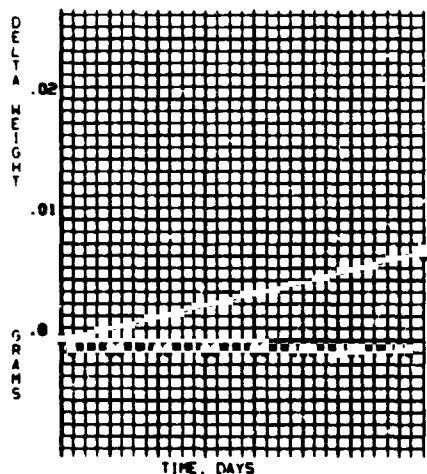
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	GRAMS
	.000		.34770+00
	.100-02		.35250+00
	.000		.32900+00
	.100-02		.33350+00
	.000		.31950+00
	.760+03	SAMPLE DESTROYED	
	.000		.32830+00
	.760+03	SAMPLE DESTROYED	

NOTE, .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL

PROPERTY - DELTA HEIGHT



ENVIRONMENT (BIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
PROPERTY -TENSILE

ENVIRONMENT 1 CONTROL, 70 DEG F (21 DEG C)			ENVIRONMENT 2 (AB) VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DAYS	LB/IN N/M	F	HOURS	LB/IN N/M
	.0	.410+01 .718+03			
	.0	.384+01 .673+03		240.0	.438+01 .767+03
	10.0	.418+01 .732+03		240.0	.444+01 .778+03
	10.0	.430+01 .753+03			
	150.0	.448+01 .785+03			
	150.0	.460+01 .806+03			

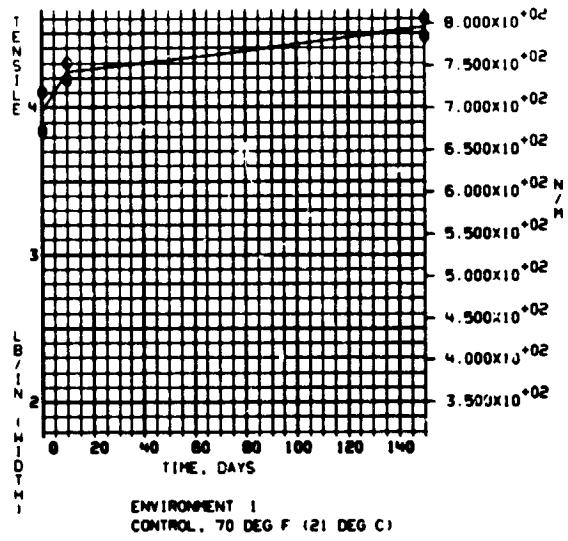
ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

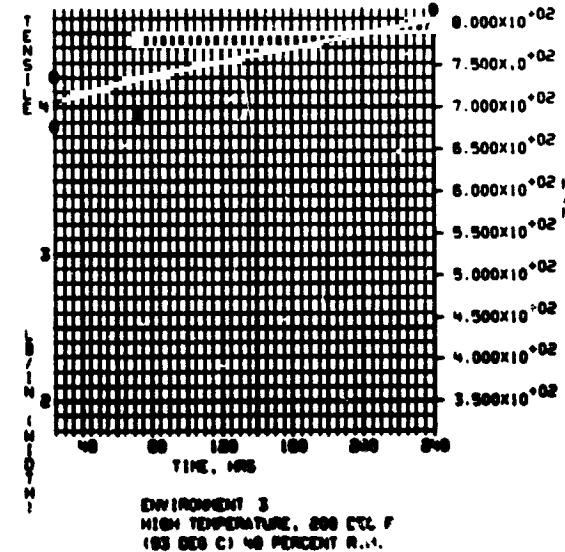
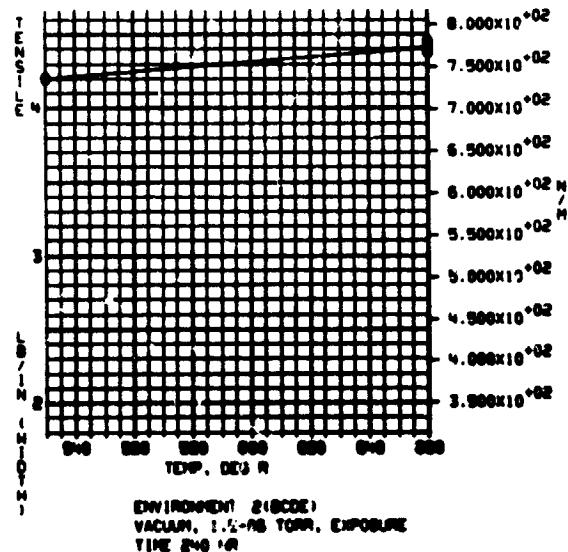
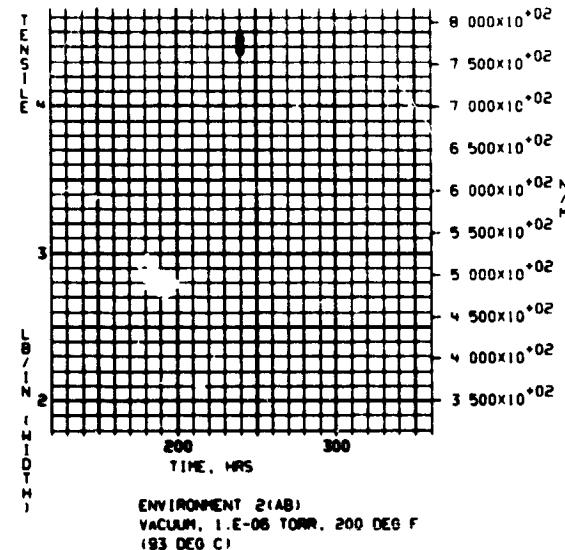
F	DEG R	DEG K	LB/IN	N/M	F	HOURS	LB/IN	N/M
560.	367.		.438+01	.767+03		24.0	.420+01	.736+03
660.	367.		.444+01	.778+03		24.0	.386+01	.676+03
530.	294.		.420+01	.736+03		72.0	.394+01	.690+03
						72.0	.444+01	.778+03
						240.0	.452+01	.792+03
						240.0	.466+01	.816+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL



PROPERTY - TENSILE



MATERIAL -SINGLE GOLDIZED KAPTON. 1/4 MIL
 PROPERTY -TENSILE

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	LB/IN	N/M
	72.0	.330+01	.578+03
	72.0	.426+01	.746+03

ENVIRONMENT 6
 95 PERCENT R.H./SALT / IR
 95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	72.0	.373+01	.662+03
	72.0	.324+01	.568+03

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

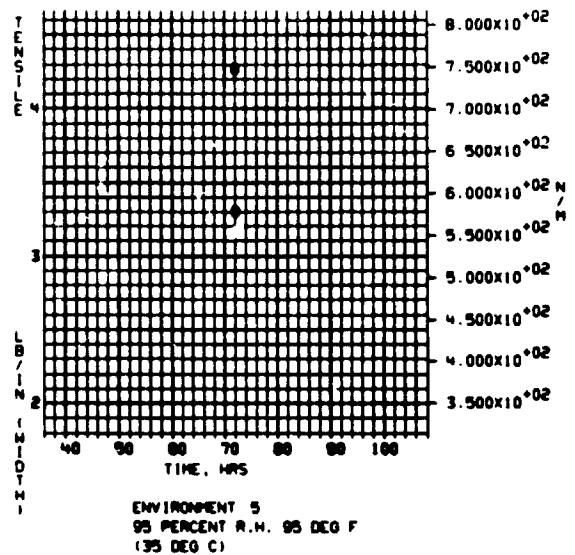
F	HOURS	LB/IN	N/M
	.5	.404+01	.708+03
	.5	.440+01	.771+03
	2.0	.426+01	.746+03
	2.0	.400+01	.701+03
	24.0	.410+01	.718+03
	24.0	.324+01	.568+03

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

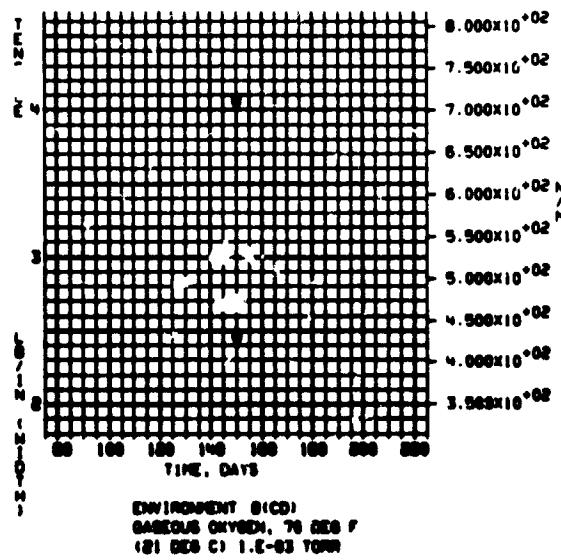
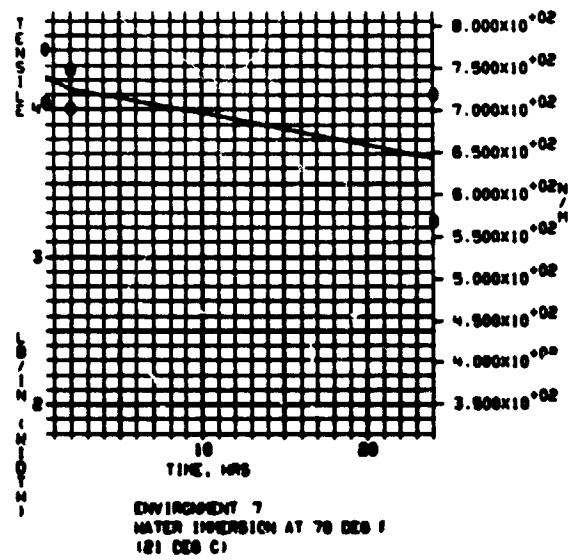
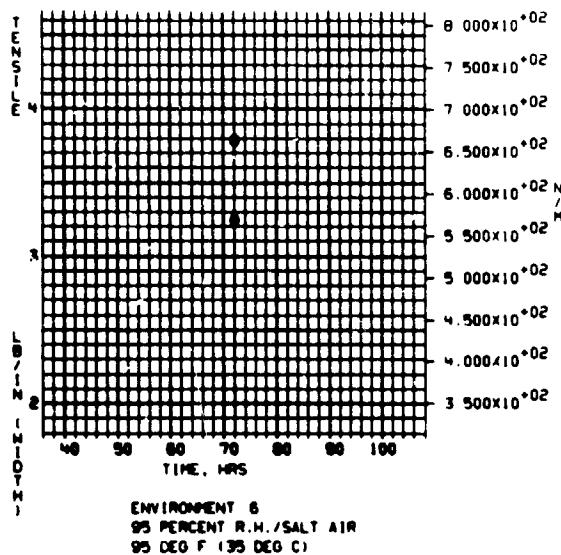
F	DAYs	LB/IN	N/M
	150.0	.406+01	.711+03
	150.0	.246+01	.431+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL



PROPERTY- TENSILE



MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY - TENSILE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M
150.0		.176+01	.308+03
150.0		.426+01	.746+07

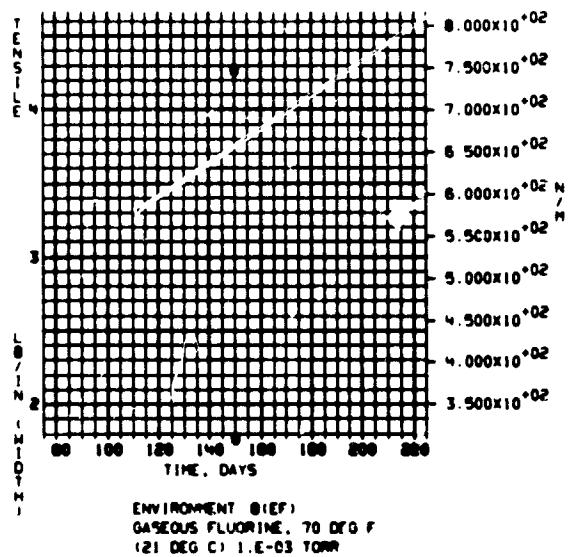
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	F	P.P.	TORR	LB/IN	N/M
			.100-02	.430+01	.753+03
			.100-02	.406+01	.711+03
			.760+03	SAMPLE DESTROYED	
			.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

PROPERTY- TENSILE



MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL
PROPERTY - EMITTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	EMITTANCE
I	.0	.180-01
I	10.0	.200-01
I	.0	.170-01
I	10.0	.200-01
I	.0	.190-01
I	150.0	.310-01
I	.0	.180-01
I	150.0	.310-01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	EMITTANCE
I	.0	.180-01
I	240.0	.160-01
I	.0	.200-01
I	240.0	.160-01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

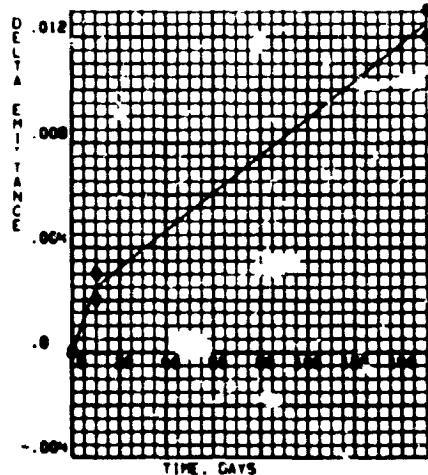
F	DEG R	DEG K	EMITTANCE
I	-	-	.180-01
I	660.	367.	.160-01
I	-	-	.200-01
I	660.	367.	.160-01
I	-	-	.170-01
I	530.	294.	.220-01
I	-	-	.160-01
I	530.	294.	.200-01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.170-01
I	24.0	.210-01
I	.0	.180-01
I	24.0	.210-01
I	.0	.180-01
I	72.0	.210-01
I	.0	.190-01
I	72.0	.210-01
I	.	.170-01
I	240.0	.180-01
I	.0	.170-01
I	240.0	.190-01

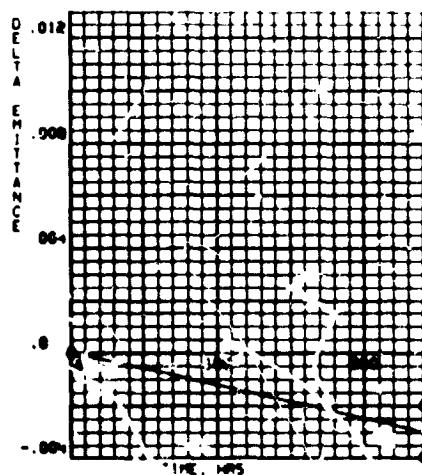
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL

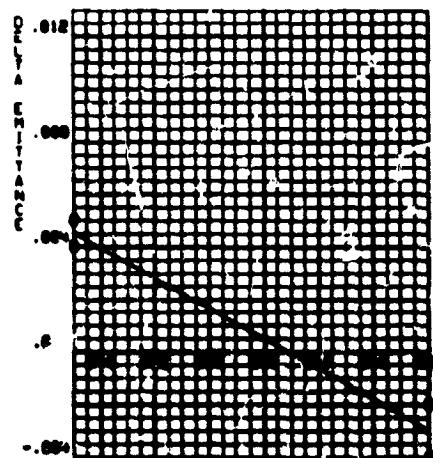


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

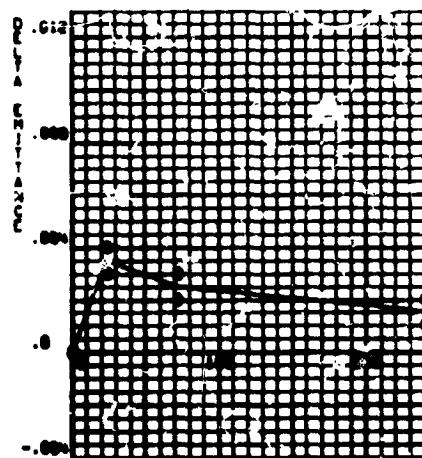
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 2(40)
VACUUM, 1.1 / 16 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(80)
VACUUM, 1.1 / 16 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
H20 TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 5			ENVIRONMENT 6		
95 PERCENT R.H., 95 DEG F (35 DEG C)			95 PERCENT R.H./SALT AIR 95 DEG F (35 DEG C)		
F	HOURS	EMITTANCE	F	HOURS	EMITTANCE
	.0	.180-01		.0	.200-01
	72.0	.190-01		72.0	.230-01
	.0	.170-01		.0	.170-01
	72.0	.190-01		72.0	.250-01

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	EMITTANCE
	.0	.180-01
	.5	.220-01
	.0	.180-01
	.5	.210-01
	.0	.180-01
	2.0	.210-01
	.0	.170-01
	2.0	.200-01
	.0	.180-01
	24.0	.200-01
	.0	.190-01
	24.0	.190-01

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

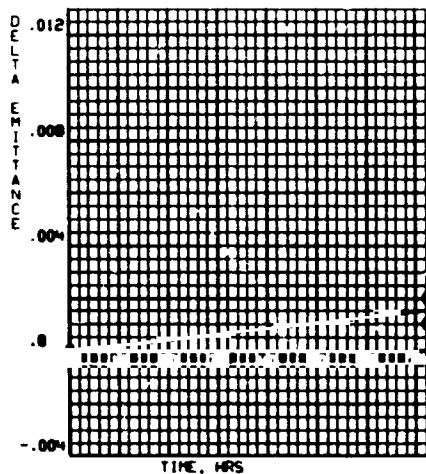
F	DAYS	EMITTANCE
	.0	.190-01
	150.0	.240-01
	.0	.190-01
	150.0	.250-01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

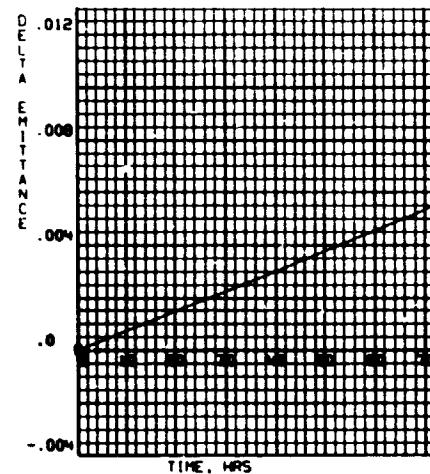


MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

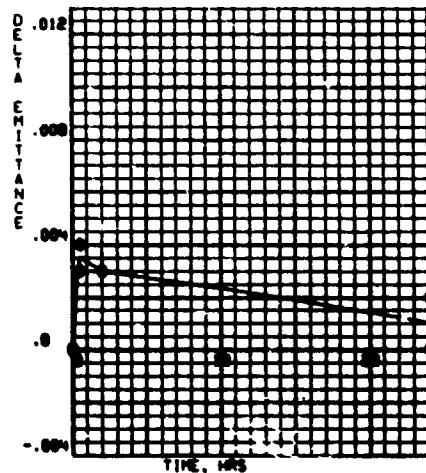
PROPERTY- DELTA EMITTANCE



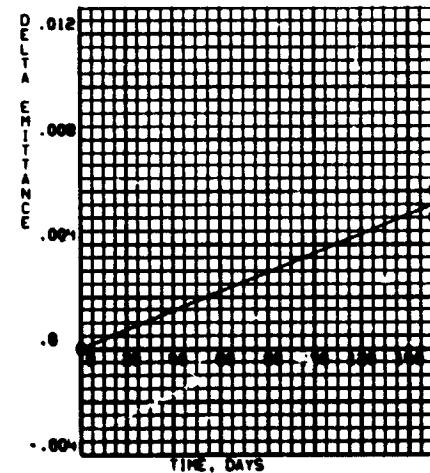
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY - EMITTANCE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.170-01
	150.0	.210-01
	.0	.180-01
	150.0	.200-01

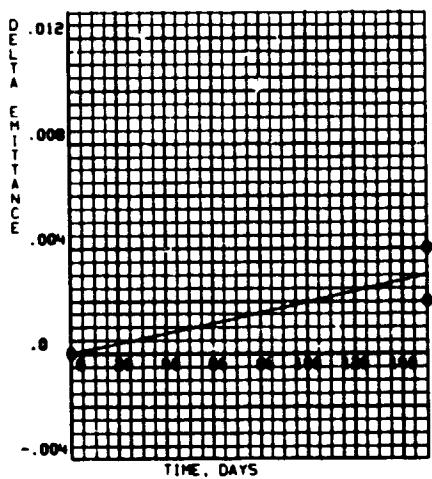
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	F	P.P. TORR	EMITTANCE
	.000	.190-01	
	.100-02	.250-01	
	.000	.160-01	
	.100-02	.270-01	
	.000	.190-01	
	.760+03	SAMPLE DESTROYED	
	.000	.180-01	
	.760+03	SAMPLE DESTROYED	

NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL I)
 • ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 • THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 • THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

PROPERTY- DELTA EMITTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -REFLECTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	REFLECTANCE
	.0	.733+00
	10.0	.733+00
	.0	.733+00
	10.0	.711+00
	.0	.734+00
	150.0	.737+00
	.0	.735+00
	150.0	.730+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	REFLECTANCE
	.0	.696+00
	240.0	.640+00
	.0	.733+00
	240.0	.740+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

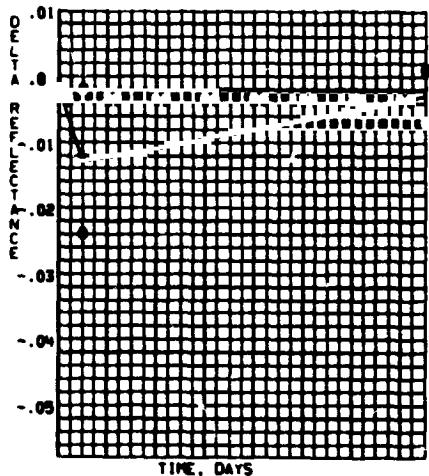
F	DEG R	DEG K	REFLECTANCE
	-	-	.696+00
	660.	367.	.640+00
	-	-	.733+00
	660.	367.	.740+00
	-	-	.733+00
	530.	294.	.733+00
	-	-	.734+00
	530.	294.	.734+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	REFLECTANCE
	.0	.740+00
	24.0	.748+00
	.0	.731+00
	24.0	.743+00
	.0	.730+00
	72.0	.739+00
	.0	.734+00
	72.0	.738+00
	.0	.736+00
	240.0	.740+00
	.0	.739+00
	240.0	.744+00

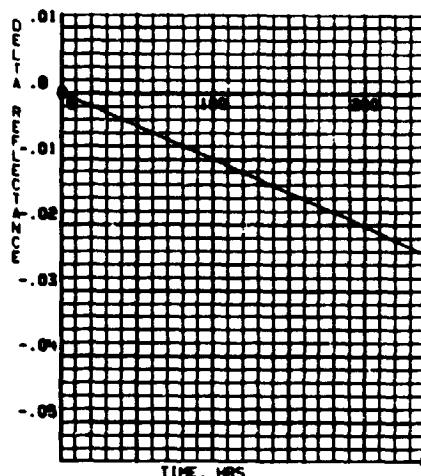
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

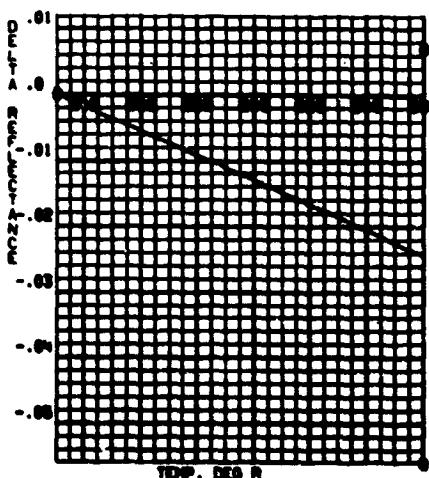


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

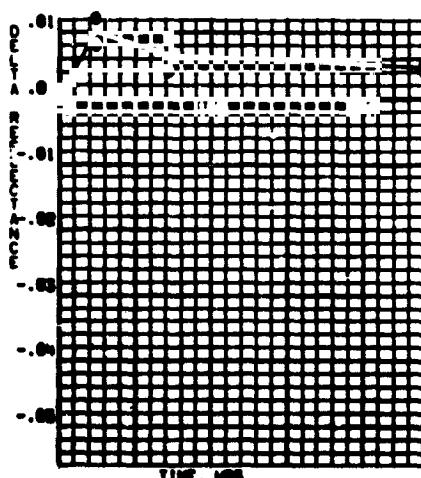
PROPERTY- DELTA REFLECTANCE



ENVIRONMENT 2(AB)
VACUUM, 1.E-08 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-08 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -REFLECTANCE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.727+00
	72.0	.731+00
	.0	.736+00
	72.0	.720+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	REFLECTANCE
	.0	.737+00
	72.0	.735+00
	.0	.736+00
	72.0	.736+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	REFLECTANCE
	.0	.736+00
	.5	.718+00
	.0	.742+00
	.5	.736+00
	.0	.741+00
	2.0	.732+00
	.0	.733+00
	2.0	.737+00
	.0	.735+00
	24.0	.732+00
	.0	.731+00
	24.0	.723+00

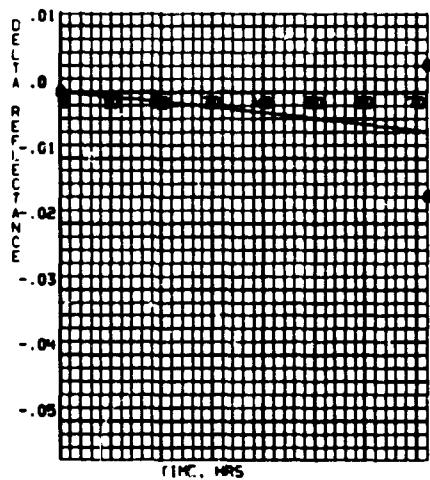
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAY5	REFLECTANCE
	.0	.758+00
	150.0	.730+00
	.0	.731+00
	150.0	.721+00

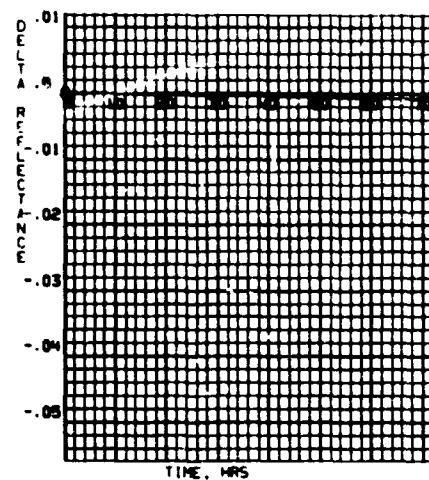
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE $\pm .02$ UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - SINGLE GOLDIZED KAPTON, 1/4 MIL

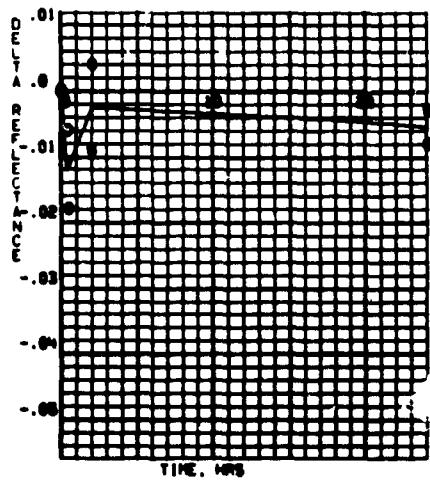
PROPERTY - DELTA REFLECTANCE



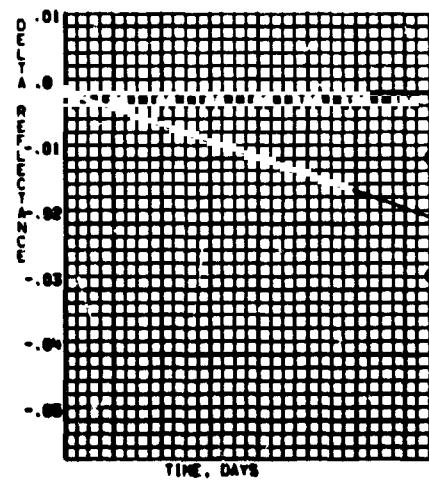
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER (IMMERSION AT 70 DEG F
(21 DEG C))



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SINGLE GOLDIZED KAPTON, 1/4 MIL
 PROPERTY -REFLECTANCE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	REFLECTANCE
	.0	.739+00
	150.0	.704+00
	.0	.757+00
	150.0	.711+00

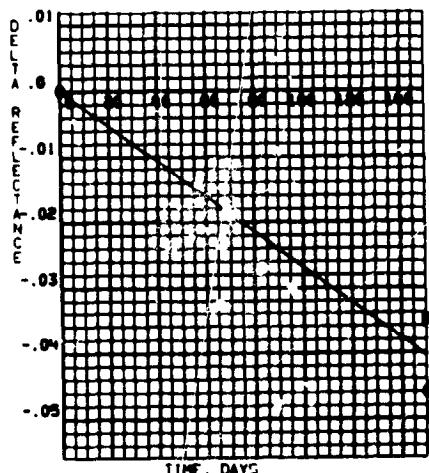
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DFG C).4 HR

F	F	P.P.	TORR	REFLECIAENCE
	.000			.733+00
	.100-02			.733+00
	.000			.738+00
	.100-02			.733+00
	.000			.731+00
	.760+03	SAMPLE	DESTROYFD	
	.000			.741+00
	.760+03	SAMPLE	DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- SINGLE GOLDIZED KAPTON, 1/4 MIL

PROPERTY- DELTA REFLECTANCE



ENVIRONMENT: SIEF
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ADHESION TEST RESULTS

Material*: Single Gold-Coated Kapton, S-G-K

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R (°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr		660 (366)	24	0 0
			660 (366)	240	
			530 (294)	240	
			140 (78)	240	
			37 (21)	240	
3	200°F (93°C) 40% R.H.			24	0
				72	0
				240	0
5	95% R.H. at 95°F (35°C)			12	1/3**
				24	
				72	
6	95% R.H./Salt Air at 95°F(35°C)			12	0
				24	
				72	
7	Water Immersion at 70°F (21°C)			0.5	0
				2	0
				24	0
8e, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³		100	0/.001**
		10 ⁻³		3600	
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³		100	.001/.001**
		10 ⁻³		3600	
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³		4	.01/.001**
		760		4	Destroyed in environment

* See Table 5 for complete identification of test material (Volume I),
**Two specimens

FLEXIBILITY TEST RESULTS

Material*: Single Gold-Coated Kapton, S-G-K

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R(°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\leq 10^{-6}$ Torr	660 (366)	24				
			240		✓		
			240		✓		
			140 (78)	240			
			37 (21)	240			
3	200°F (93°C) 40% R.H.		24		✓		
			72		✓		
			240		✓		
5	95% R.H. at 95°F (35°C)		12				
			24				
			72		✓		
6	95% R.H./Salt Air at 95°F (35°C)		12				
			24				
			72		✓		
7	Water Immersion at 70°F (21°C)		0.5		✓		
			2		✓		
			24		✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³					
		10 ⁻³					
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³					
		10 ⁻³					
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³	100				
		760	3600		✓		
				4	✓		
				4	Destroyed in environment.		

* See Table 5 for complete identification of test material (Volume I)

** As compared to control samples

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE GOLDIZED KAPTON

ENVIRONMENT 2B

VACUUM, 1UE-06 TORR, 560 DEG.R (365 DEG.K)

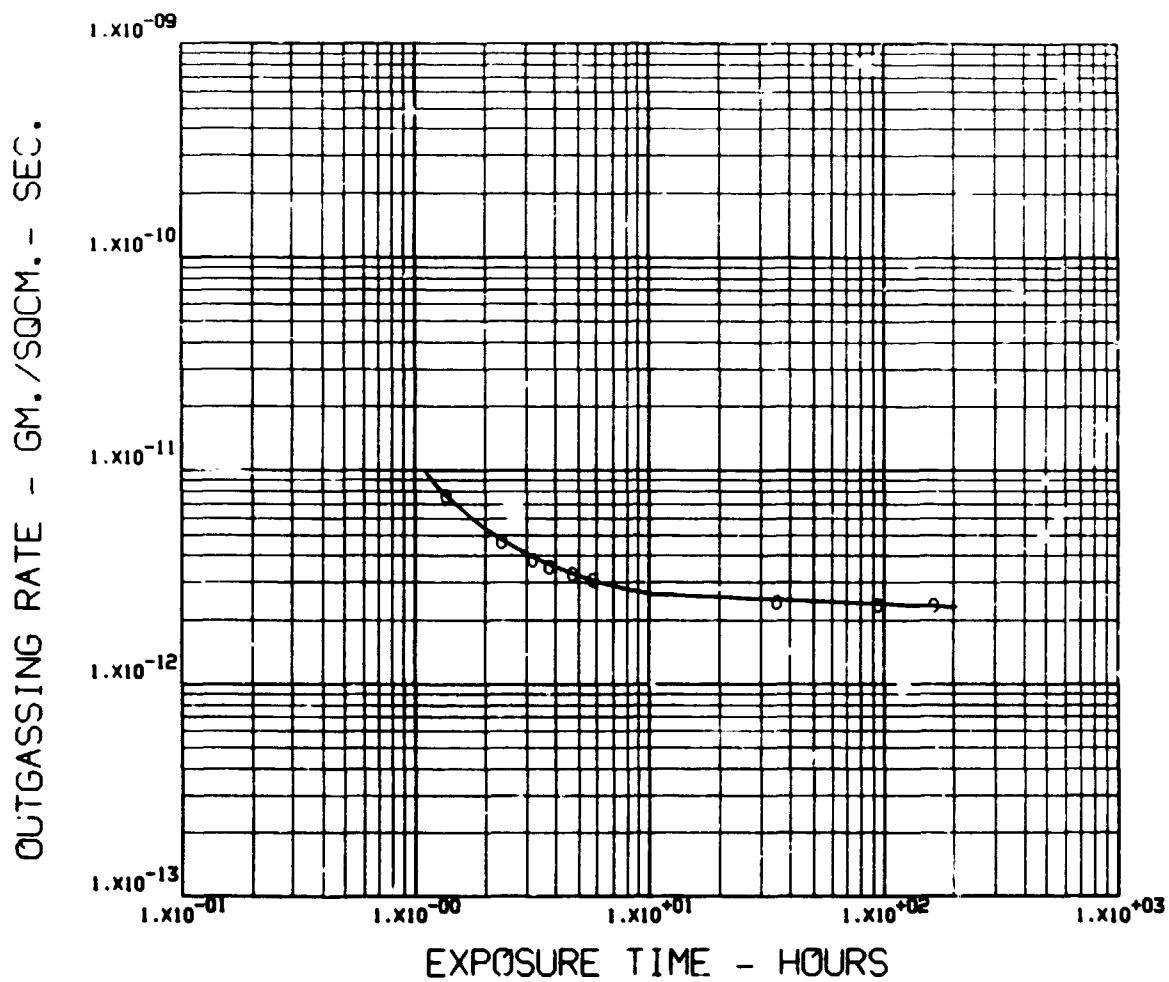
TEST DATE 032971

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 4.4000 GMS. SAMPLE AREA = 7432. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPO. H2O	N2	CO2
1.34	7.56-12	.77	.21	.03
2.31	4.64-12	.71	.16	.13
3.14	3.79-12	.82	.13	.05
3.72	3.49-12	.83	.12	.05
4.67	3.23-12	.78	.15	.07
5.76	3.03-12	.82	.11	.07
34.67	2.40-12	.91	.07	.02
43.76	2.32-12	.86	.08	.06
164.17	2.32-12	.86	.08	.06

PROPERTY - OUTGASSING
MATERIAL - SINGLE GOLDIZED KAPTON



ENVIRONMENT 2B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SINGLE GOLDIZED KAPTON

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

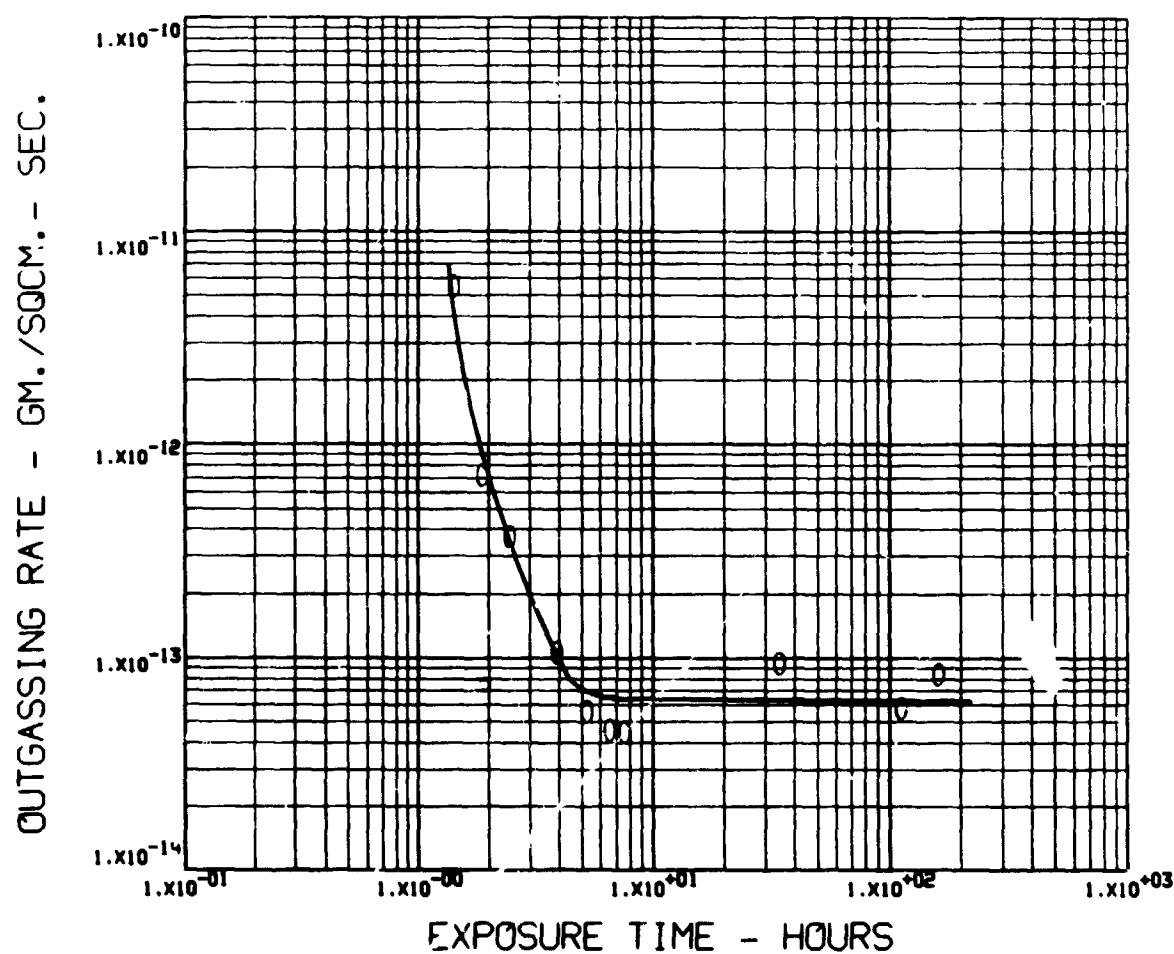
TEST DATE 020371

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 1.1025 GMS. SAMPLE AREA = 1862. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.42	5.55-12	.71	.25	.04
1.92	7.52-13	.74	.24	.03
2.42	7.88-13	.73	.25	.03
3.92	1.09-13	.67	.30	.03
5.29	5.73-14	.66	.32	.02
6.72	4.49-14	.65	.32	.02
7.79	4.41-14	.67	.31	.02
75.50	9.51-14	.62	.35	.03
111.09	5.72-14	.54	.41	.05
167.42	8.92-14	.57	.38	.05

PROPERTY - OUTGASSING
MATERIAL - SINGLE GOLDIZED KAPTON



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SINGLE GOLDIZED KAPTON

ENVIRONMENT 4A

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

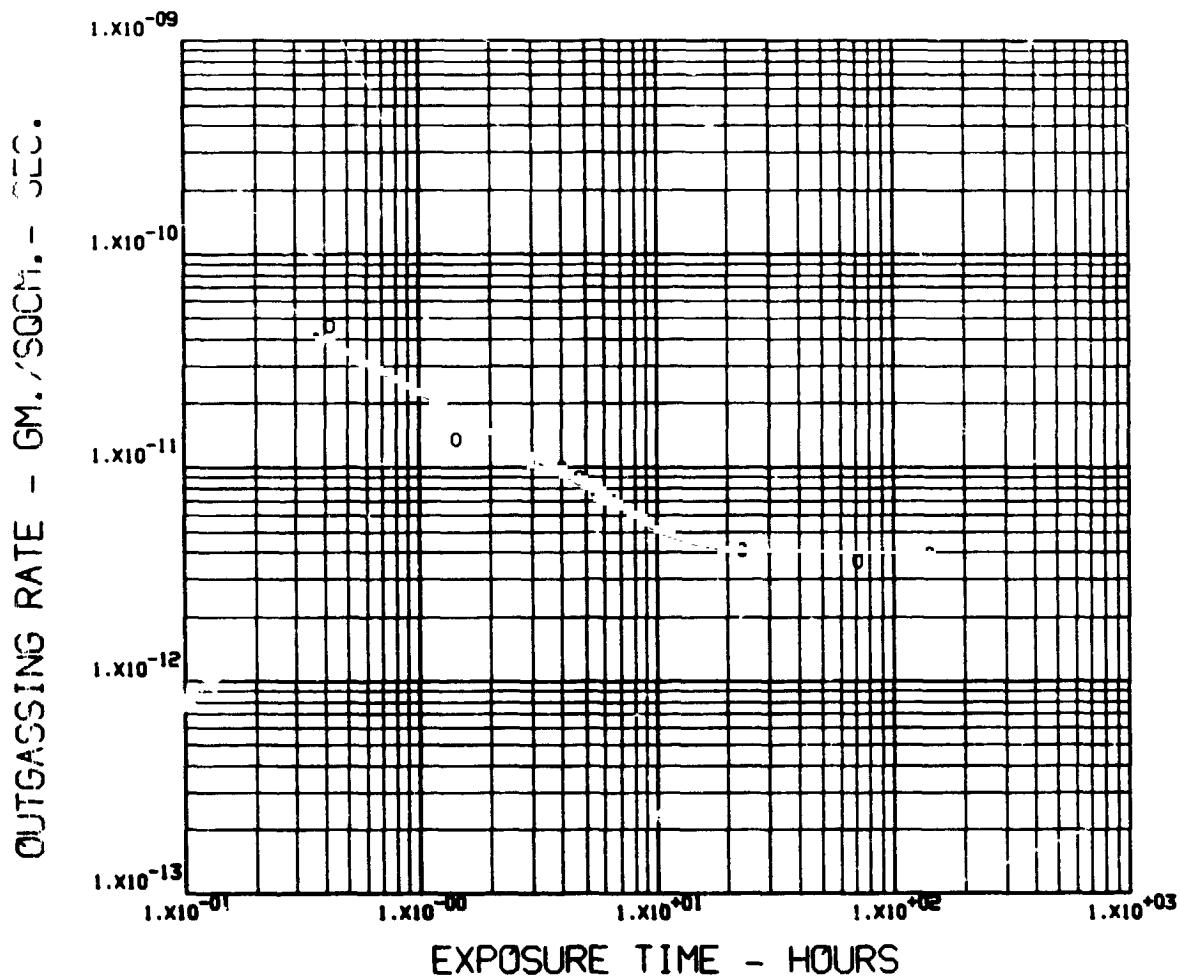
TEST DATE 052272

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .9075 GMS. SAMPLE AREA = 1531. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.42	4.58-11	.45	.00	.55
1.42	1.34-11	.65	.00	.35
3.00	1.06-11	.64	.00	.36
4.00	9.87-12	.71	.00	.29
4.67	8.93-12	.69	.00	.31
5.50	7.67-12	.77	.00	.23
6.33	7.07-12	.71	.00	.29
22.75	4.06-12	.79	.00	.21
70.50	3.63-12	.83	.01	.17
143.50	3.89-12	.85	.02	.13

PROPERTY- OUTGASSING
MATERIAL- SINGLE GOLDIZED KAPTON



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR
MATERIAL - SINGLE GOLDIZED KAPTON

ENVIRONMENT 4B

VACUUM, 10^{-6} TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

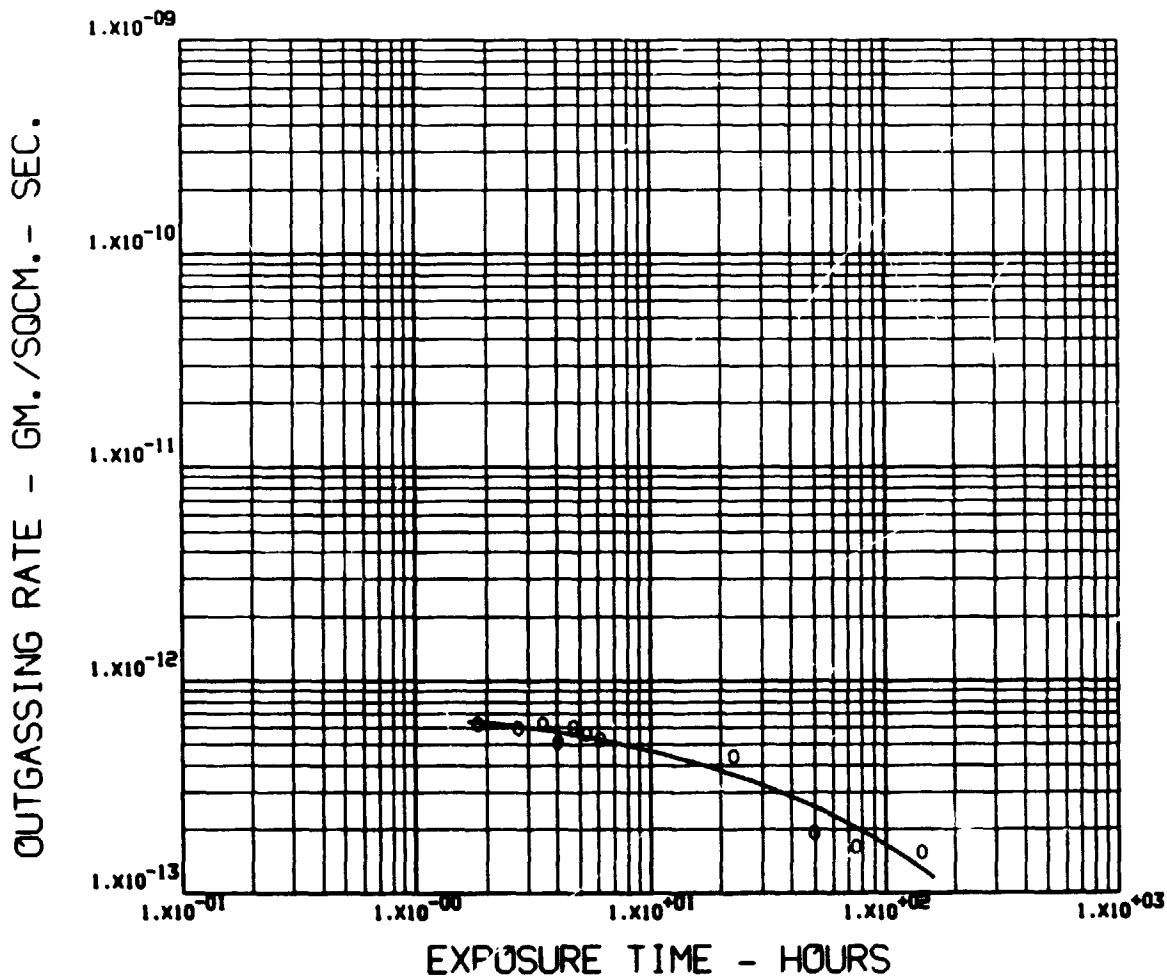
TEST DATE 110171

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 1.1090 GMS. SAMPLE AREA = 1870. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.81	6.26-13	.12	.28	.59
2.68	5.93-13	.06	.22	.72
3.41	6.25-13	.04	.27	.68
3.98	5.07-13	.03	.22	.75
4.66	6.00-13	.03	.26	.71
5.30	5.60-13	.03	.30	.67
6.08	5.30-13	.05	.37	.58
22.66	4.34-13	.09	.28	.62
49.83	1.92-13	.61	.05	.34
74.41	1.65-13	.12	.39	.49
142.50	1.55-13	.04	.44	.53

PROPERTY - OUTGASSING
MATERIAL - SINGLE GOLDIZED KAPTON



ENVIRONMENT 4B VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -SILK NET
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.20345+01
	10.0	.20330+01
I	.0	.20120+01
	150.0	.20080+01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.20840+01
	24.0	.20490+01
I	.0	.20485+01
	240.0	.19810+01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

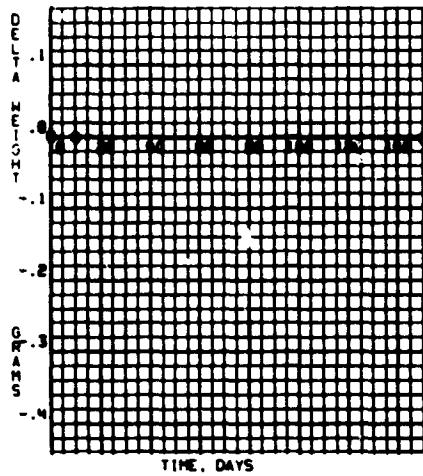
F	DEG R	DEG K	GRAMS
I	-	-	.20485+01
	660.	367.	.19810+01
I	-	-	.20475+01
	530.	294.	.20125+01
I	-	-	.20520+01
	140.	78.	.20425+01
I	-	-	.20370+01
	37.	21.	.20345+01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.20490+01
	24.0	.20155+01
I	.0	.20480+01
	72.0	.20115+01
I	.0	.20440+01
	240.0	.20020+01

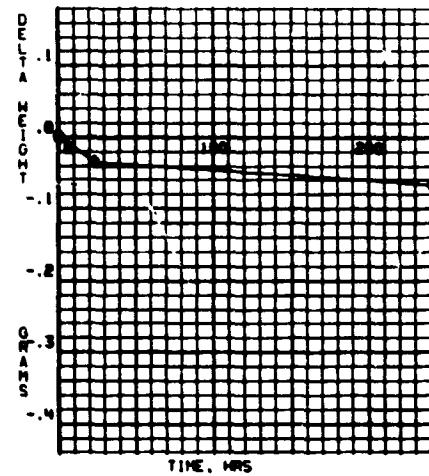
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- SILK NET

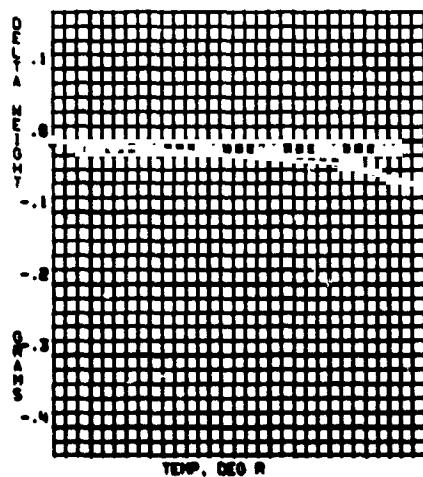


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

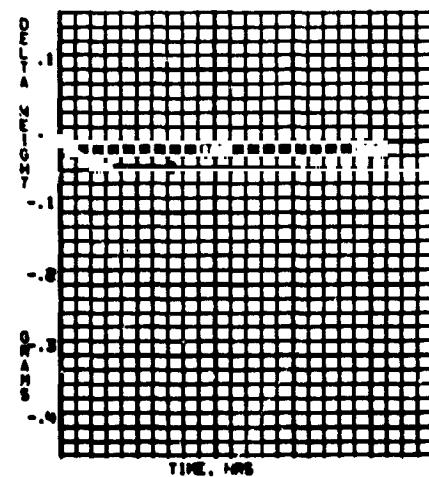
PROPERTY- DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SILK NET
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
I	.0	.20570+01
	12.0	.20400+01
I	.0	.20585+01
	24.0	.19470+01
I	.0	.20500+01
	72.0	.20650+01

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
I	.0	.20340+01
	12.0	.22145+01
I	.0	.20415+01
	24.0	.21520+01
I	.0	.20455+01
	72.0	.21245+01

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

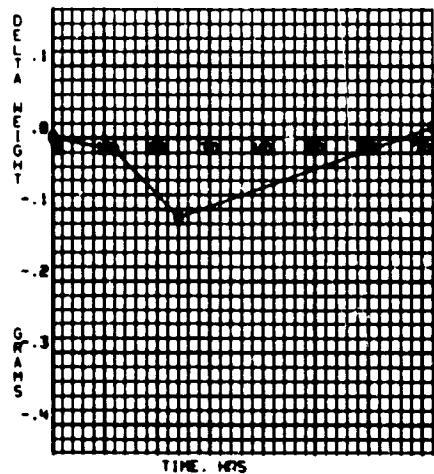
F	HOURS	GRAMS
I	.0	.20510+01
	.5	.17055+01
I	.0	.20490+01
	2.0	.16925+01
I	.0	.20450+01
	24.0	.16015+01

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.20395+01
	4.2	.20215+01
I	.0	.20495+01
	150.0	.20595+01

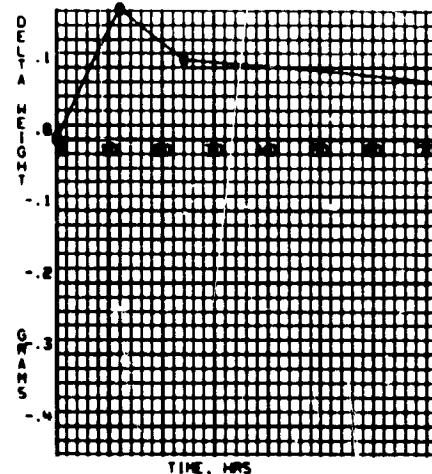
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SILK NET

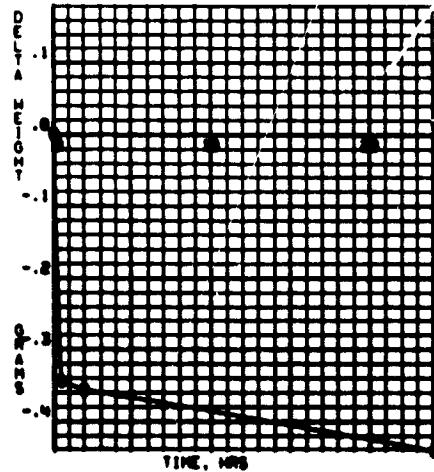


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(25 DEG C)

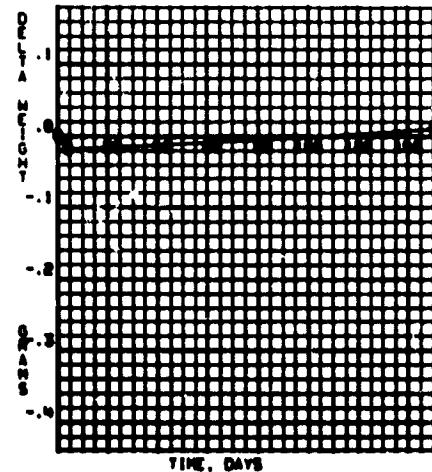
PROPERTY /- DELTA WEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO₂)
GASEOUS CHAMBER, 70 DEG F
121 DEG C 1.E-03 TORR

MATERIAL -SILK NET
PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

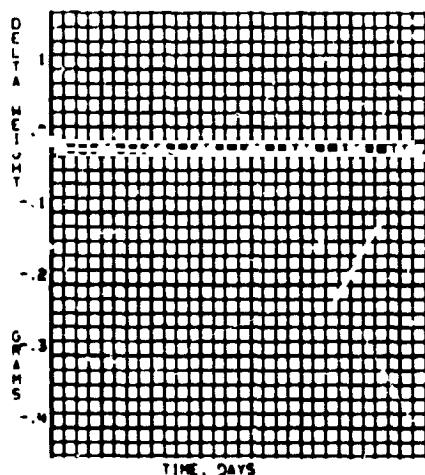
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F		DAYS	GRAMS	F	F	P.P. TORR	GRAMS
I		.0	.20640+01	I	.000	.20800+01	
		4.2	.20520+01		.100-02	.20710+01	
I		.0	.20960+01	I	.000	.20715+01	
		150.0	.20745+01		.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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THE E+01 ETC. IS THE EXPONENT OF 10
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MATERIAL - SILK NET

PROPERTY - DELTA WEIGHT



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL = SILK NET
 PROPERTY = LAYER DENSITY
 (FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
 INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	NO/IN	NO/CM
	.0	.238+03	.938+02
	10.0	.217+03	.857+02
	150.0	.185+03	.730+02

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	NO/IN	NO/CM
	24.0	.139+03	.547+02
	240.0	.148+03	.584+02

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

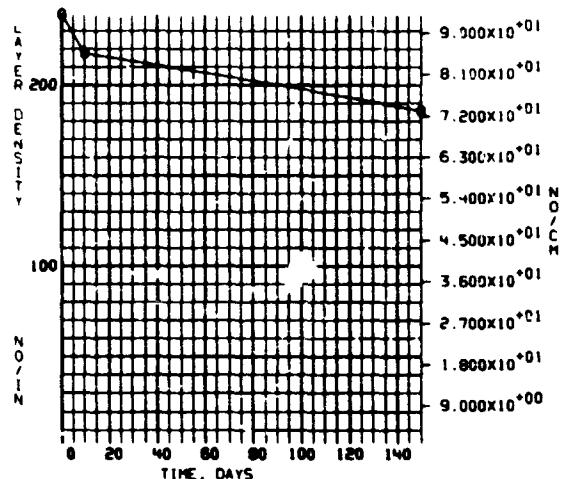
F	DEG R	DEG K	NO/IN	NO/CM
660.	367.		.148+03	.534+02
530.	294.		.208+03	.821+02
140.	78.		.238+03	.938+02
37.	21.		.185+03	.730+02

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	NO/IN	NO/CM
	24.0	.123+03	.486+02
	72.0	.123+03	.486+02
	240.0	.128+03	.505+02

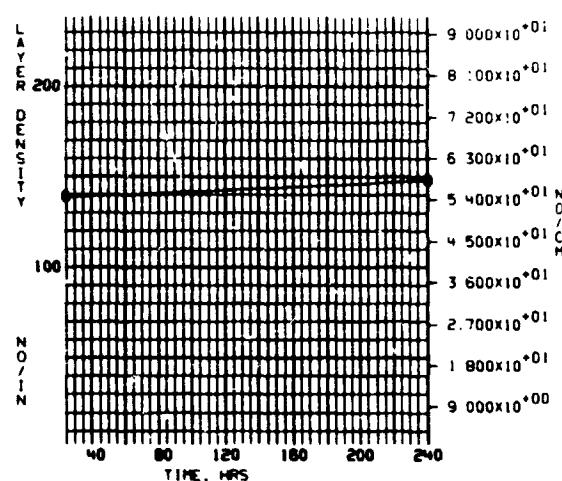
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - SILK NET

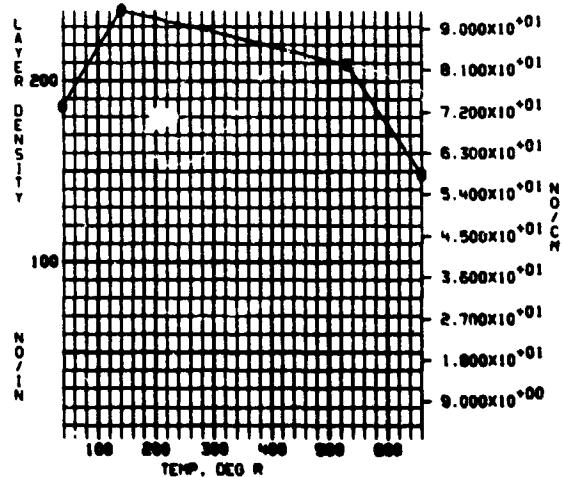


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

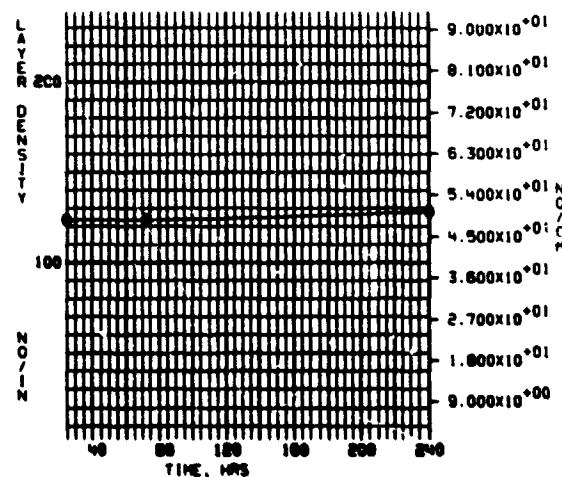
PROPERTY - LAYER DENSITY



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SILK NET
PROPERTY -LAYER DENSITY

(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	NO/IN	NO/CM	F	HOURS	NO/IN	NO/CM
	12.0	.119+03	.469+02		.5	.159+03	.625+02
	24.0	.132+03	.522+02		2.0	.152+03	.597+02
	72.0	.127+03	.499+02		24.0	.185+03	.730+02

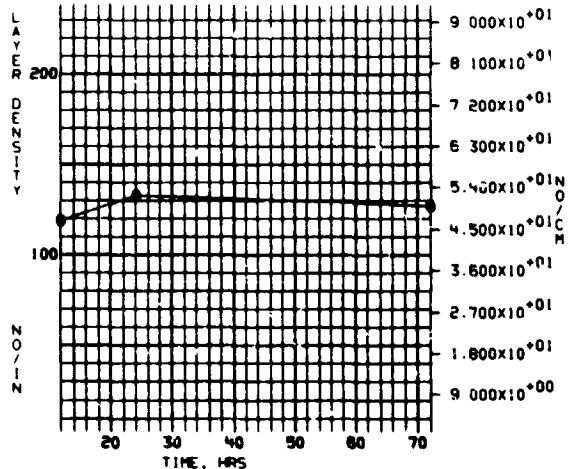
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	NO/IN	NO/CM	F	DAYS	NO/IN	NO/CM
	4.2	.145+03	.571+02		4.2	.121+03	.478+02
	150.0	.222+03	.876+02		150.0	.139+03	.547+02

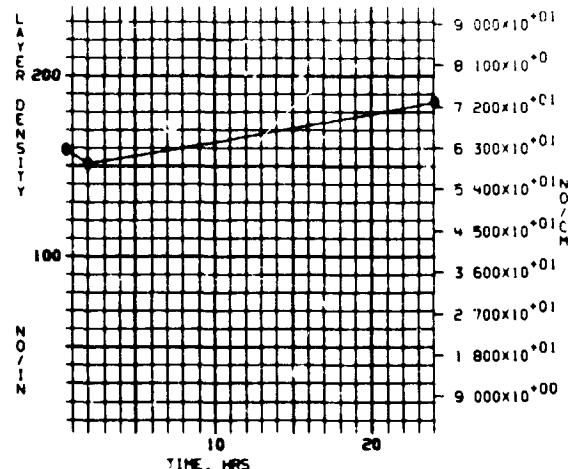
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SILK NET

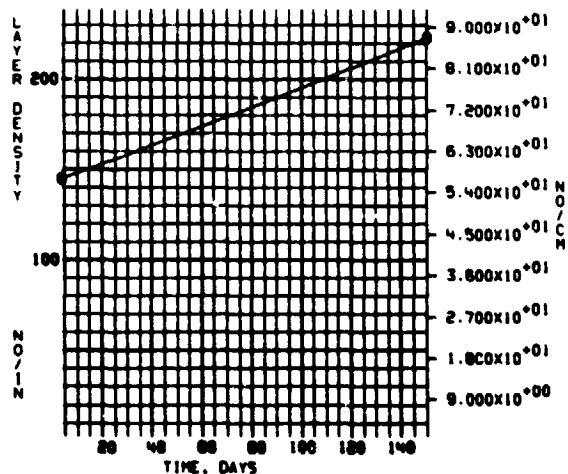


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

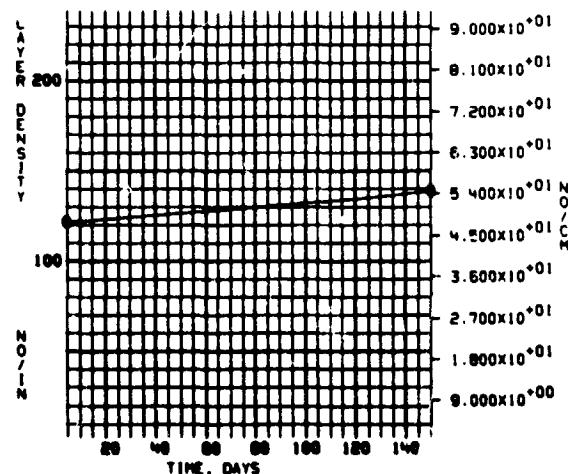
PROPERTY - LAYER DENSITY



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORN



ENVIRONMENT 8(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORN

MATERIAL -SILK NET
PROPERTY -LAYER DENSITY
(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P.	TORR	NO/IN	NO/CM
.100-02		.208+03	.821+02		
		.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

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MATERIAL -SILK NET
PROPERTY -TENSILE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	LB/IN	N/M
	.0	.230+01	.402+03
	.0	.217+01	.380+03
	10.0	.212+01	.371+03
	10.0	.204+01	.357+03
	150.0	.191+01	.335+03
	150.0	.194+01	.339+03

ENVIRONMENT 2 (AR)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.214+01	.375+03
	24.0	.217+01	.380+03
	240.0	.188+01	.330+03
	240.0	.191+01	.335+03

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

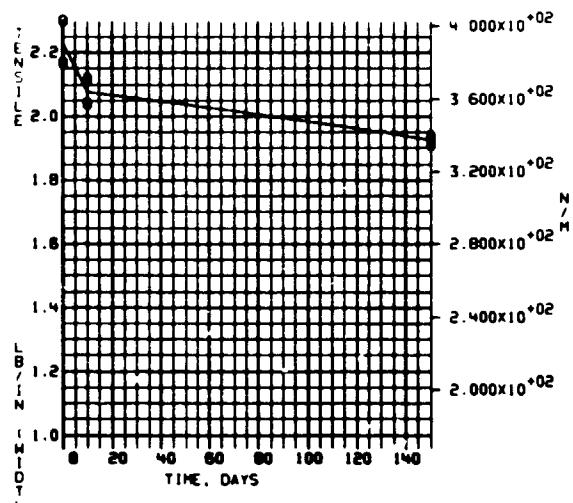
F	DEG R	DEG K	LB/IN	N/M
660.	367.	.188+01	.330+03	
660.	367.	.191+01	.335+03	
530.	294.	.183+01	.321+03	
530.	294.	.163+01	.285+03	
140.	78.	.188+01	.330+03	
140.	78.	.209+01	.366+03	
37.	21.	.183+01	.321+03	
37.	21.	.194+01	.339+03	

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	LB/IN	N/M
	24.0	.212+01	.371+03
	24.0	.201+01	.353+03
	72.0	.212+01	.371+03
	72.0	.219+01	.384+03
	240.0	.173+01	.303+03
	240.0	.955+00	.167+03

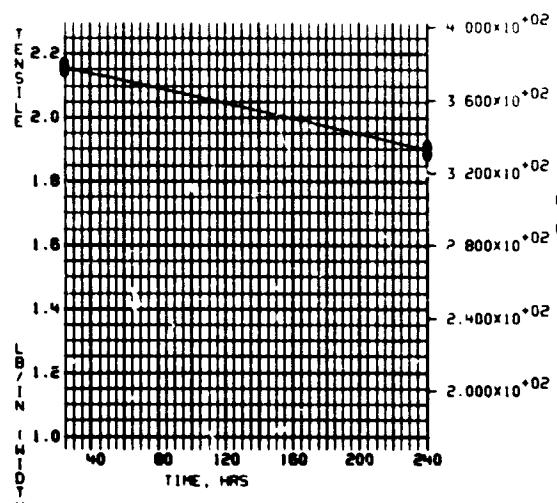
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- SILK NET

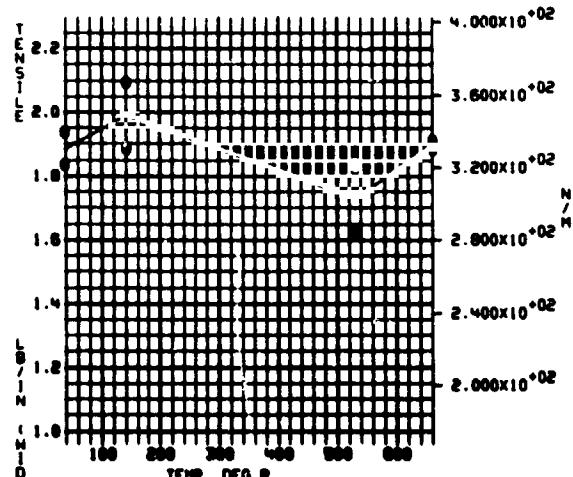


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

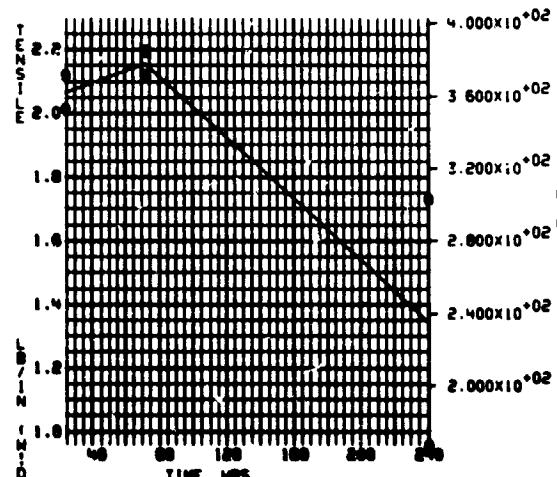
PROPERTY- TENSILE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -SILK NET
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M	F	HOURS	LB/IN	N/M
	12.0	.225+01	.393+03		12.0	.206+01	.362+03
	12.0	.199+01	.348+03		12.0	.178+01	.312+03
	24.0	.209+01	.366+03		24.0	.160+01	.280+03
	24.0	.217+01	.380+03		24.0	.194+01	.339+03
	72.0	.214+01	.375+03		72.0	.173+01	.303+03
	72.0	.206+01	.362+03		72.0	.188+01	.330+03

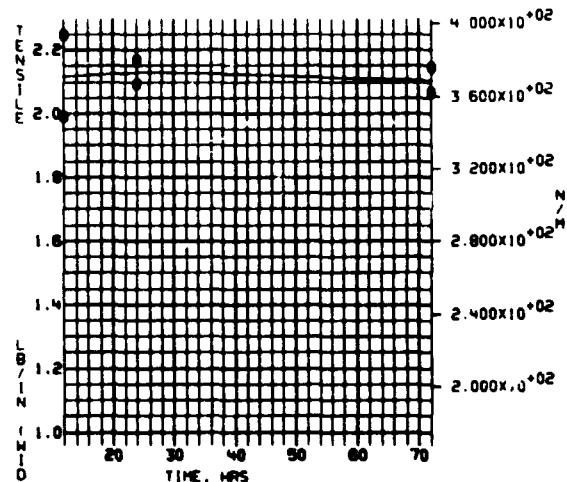
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN. 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	LB/IN	N/M	F	DAYS	LB/IN	N/M
	.5	.201+01	.353+03		4.2	.209+01	.366+03
	.5	.178+01	.312+03		4.2	.194+01	.339+03
	2.0	.194+01	.339+03		150.0	.188+01	.330+03
	2.0	.206+01	.362+03		150.0	.199+01	.348+03
	24.0	.206+01	.362+03				
	24.0	.194+01	.339+03				

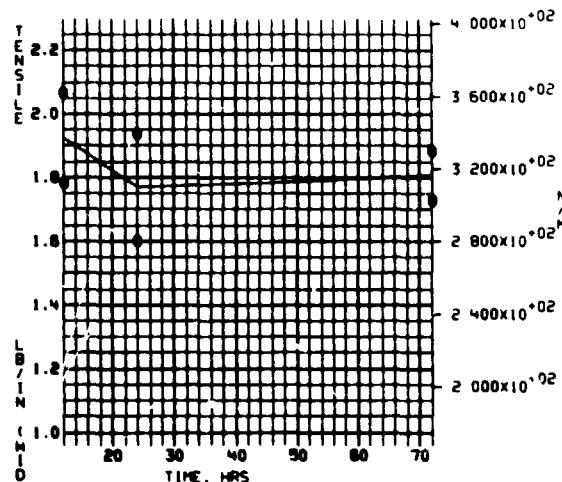
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- SILK NET

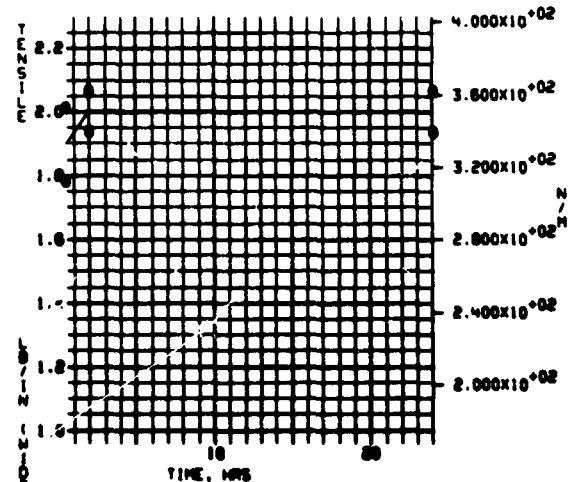


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

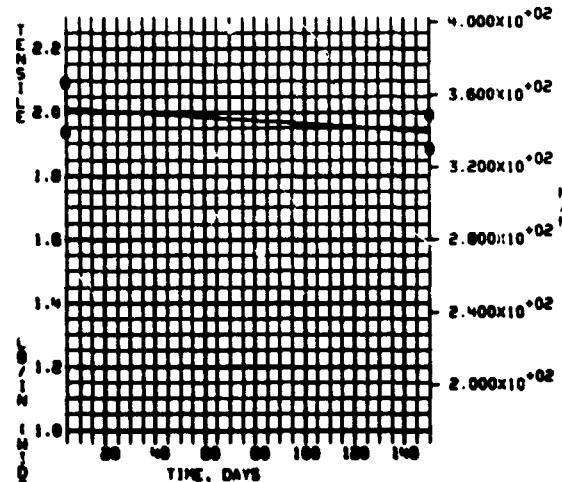
PROPERTY- TENSILE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -SILK NET
PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M
	4.2	.199+01	.348+03
	4.2	.181+01	.317+03
	150.0	.199+01	.348+03
	150.0	.163+01	.285+03

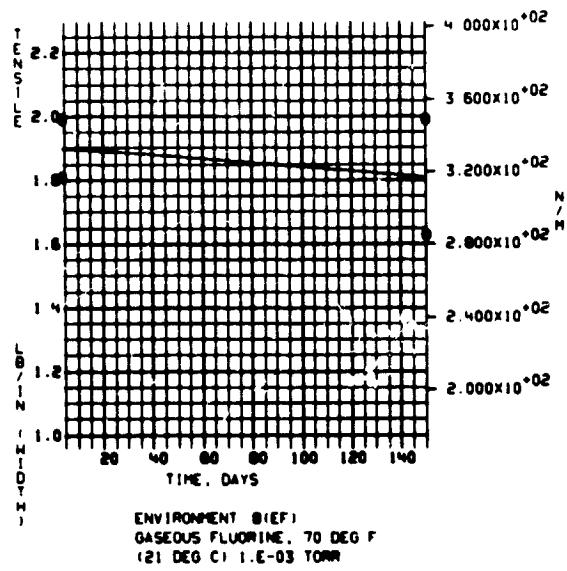
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	F	P.P. TORR	LB/IN	N/M
		.100-02	.199+01	.348+03
		.100-02	.214+01	.375+03
		.760+03	SAMPLE DESTROYED	
		.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - SILK NET

PROPERTY - TENSILE



PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SILK NET

ENVIRONMENT 2B

VACUUM: 1UE-06 TORR, 660 DEG.R (365 DEG.K)

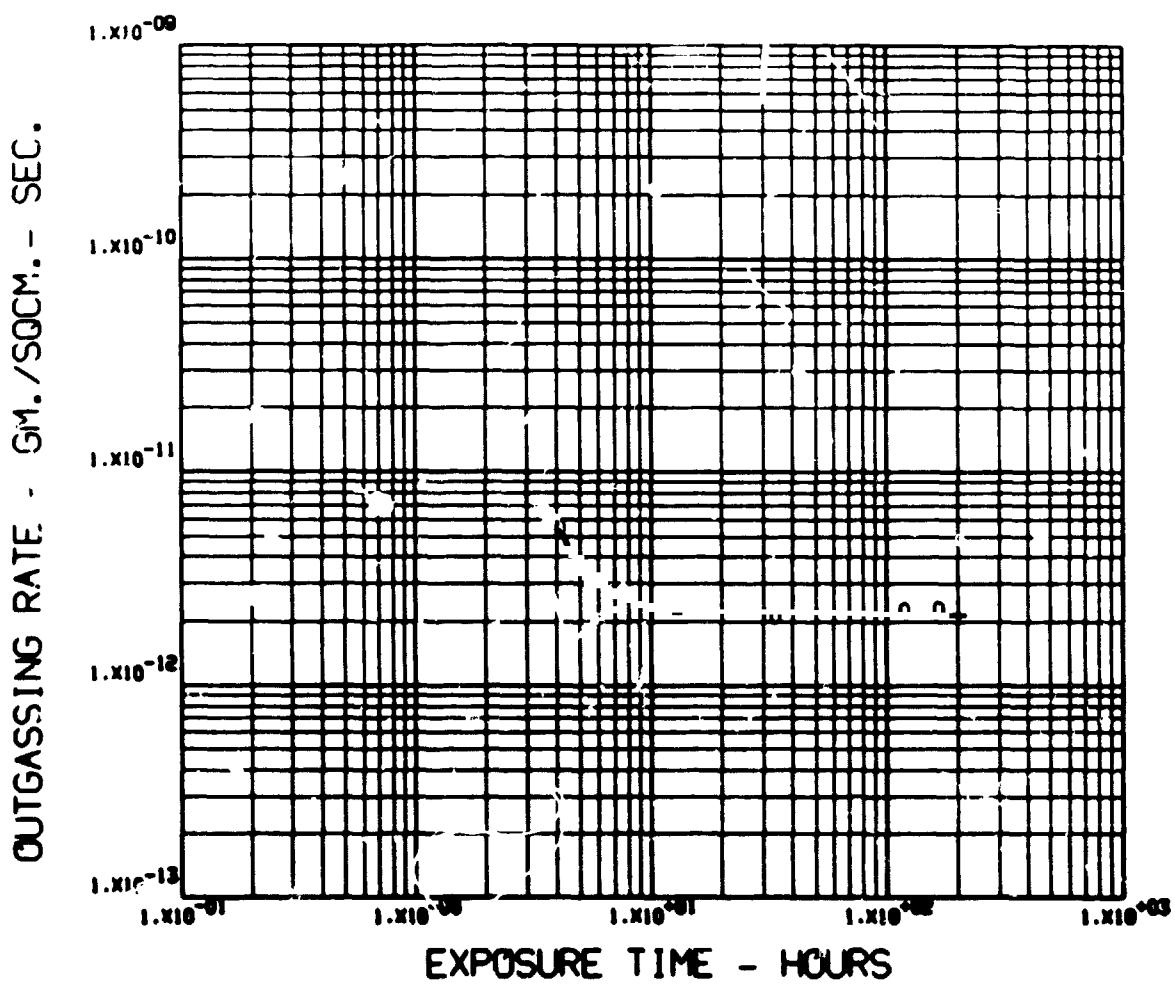
TEST DATE 033071

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.2690 GMS. SAMPLE AREA = 4181. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./50CM. ² -SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
4.08	5.45-12	.41	.16	.43
5.03	3.55-12	.87	.08	.05
5.50	3.16-12	.87	.05	.09
33.67	2.07-12	.97	.01	.02
117.40	2.24-12	.90	.04	.06
165.17	2.28-12	.89	.04	.07

PROPERTY- OUTGASSING
MATERIAL- SILK NET



ENVIRONMENT 2B VACUUM. 10-6 TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SILK NET

ENVIRONMENT 2C

VACUUM, 1UE-06 TORR, 530 DEG.R (295 DEG.K)

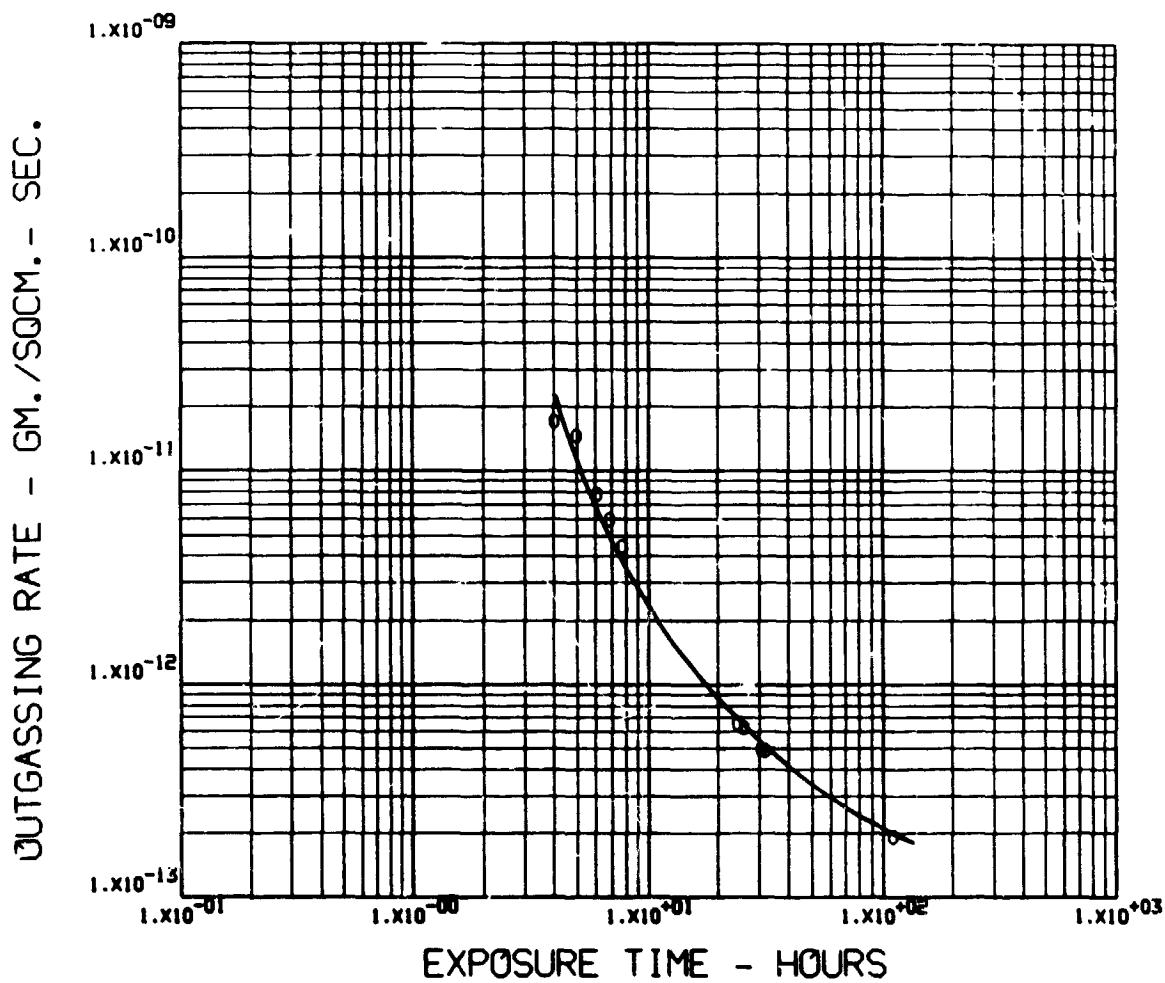
TEST DATE 020471

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.4020 GMS. SAMPLE AREA = 4510. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
4.00	1.71-11	.80	.18	.02
4.91	1.40-11	.8?	.14	.03
6.08	7.79-12	.81	.16	.03
6.83	5.87-12	.78	.18	.04
7.78	4.39-12	.79	.17	.04
27.75	6.51-13	.73	.22	.05
25.41	6.23-13	.79	.18	.03
30.58	4.97-13	.78	.18	.04
31.58	4.86-13	.69	.26	.05
109.98	1.92-13	.57	.43	.00
167.35	9.09-14	.12	.79	.08

PROPERTY - OUTGASSING
MATERIAL - SILK NET



ENVIRONMENT 2C VACUUM. 10-6 TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - SILK NET

ENVIRONMENT 4A

VACUUM, 1.0×10^{-6} TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DFG.K)

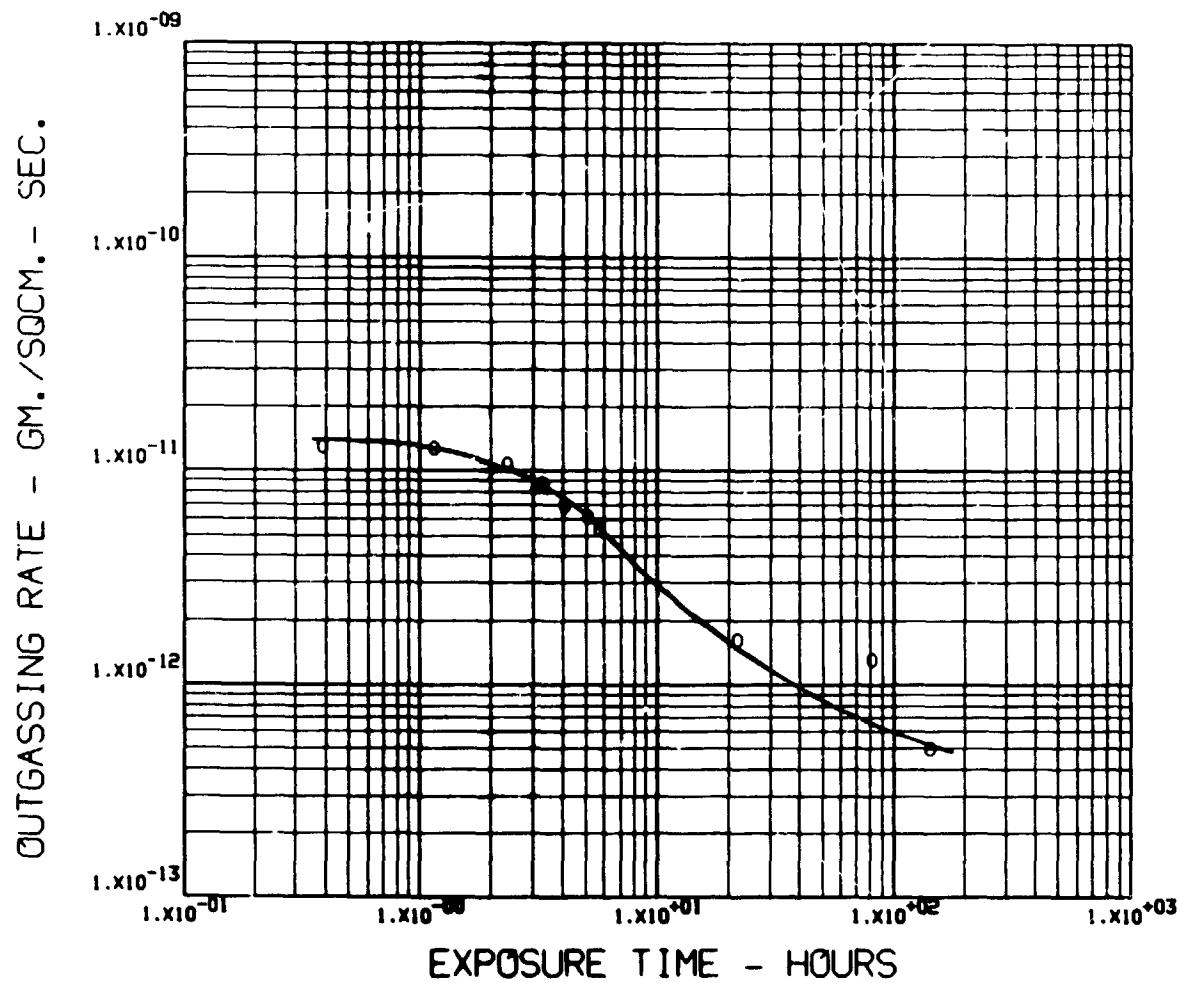
TEST DATE 052472

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 1.3635 GMS. SAMPLE AREA = 4398. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SGCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.39	1.29-11	.40	.03	.57
1.14	1.27-11	.38	.02	.60
2.30	1.06-11	.40	.01	.59
3.30	8.62-12	.49	.01	.50
4.05	6.90-12	.38	.01	.61
5.05	6.12-12	.39	.01	.60
5.64	5.32-12	.39	.01	.60
21.80	1.62-12	.41	.00	.58
80.64	1.30-12	.42	.00	.58
142.05	4.93-13	.78	.01	.20

PROPERTY - OUTGASSING
MATERIAL - SILK NET



ENVIRONMENT 4A VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = SILK NET

ENVIRONMENT 4B

VACUUM, PDE=1.6 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY GASFOL'S HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR 4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

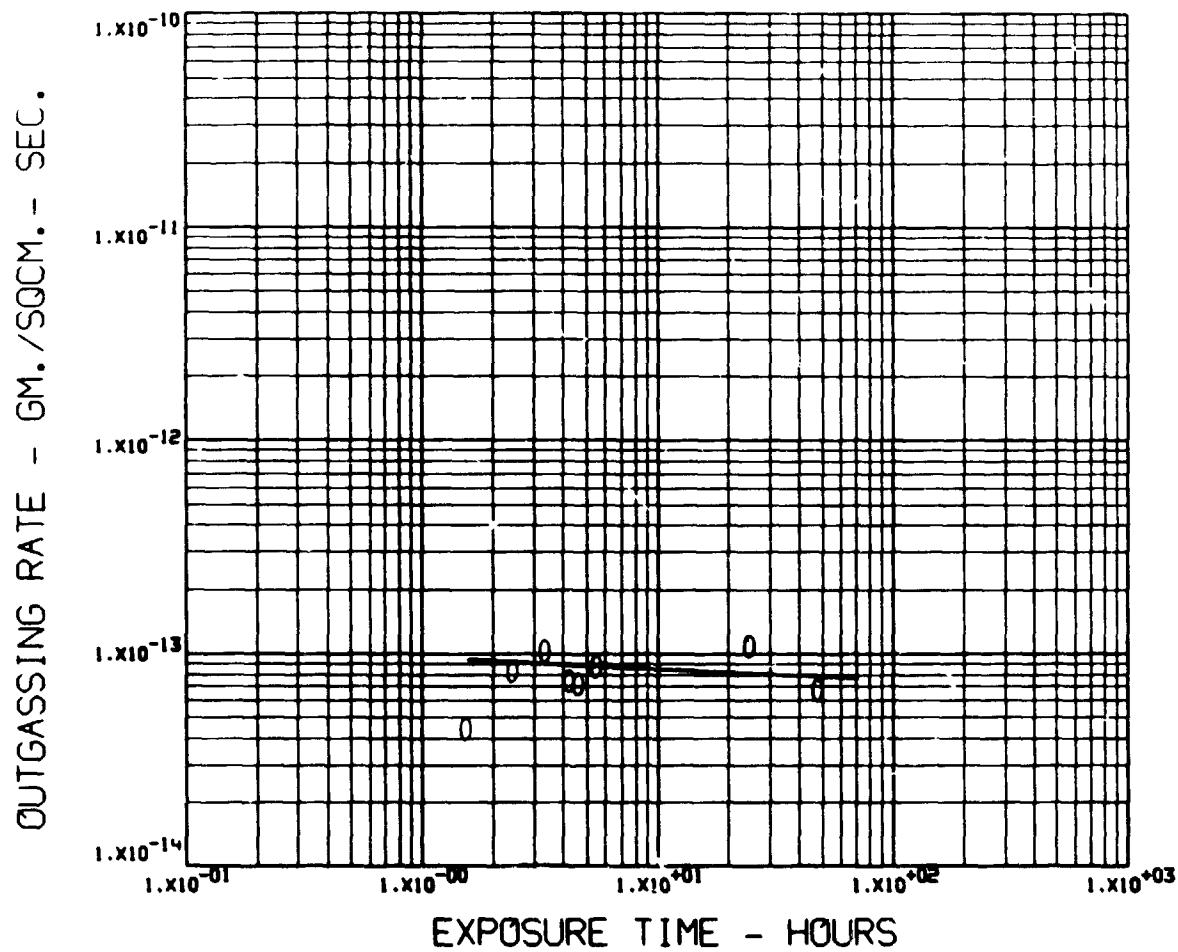
TEST DATE 070871

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.3245 GMS. SAMPLE AREA = 4265. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.50	4.60-14	.84	.01	.14
2.42	8.32-14	.81	.01	.18
3.17	1.02-13	.77	.01	.23
4.17	7.48-14	.68	.00	.32
4.83	7.47-14	.68	.01	.31
5.33	8.98-14	.44	.00	.55
25.67	1.13-13	.44	.00	.56
48.00	6.74-14	.63	.00	.37

PROPERTY - OUTGASSING
MATERIAL - SILK NET



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - NYLON NET
PROPERTY - WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.42280+01
	10.0	.42370+01
I	.0	.42065+01
	150.0	.42105+01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.42725+01
	24.0	.41820+01
I	.0	.42975+01
	240.0	.41685+01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

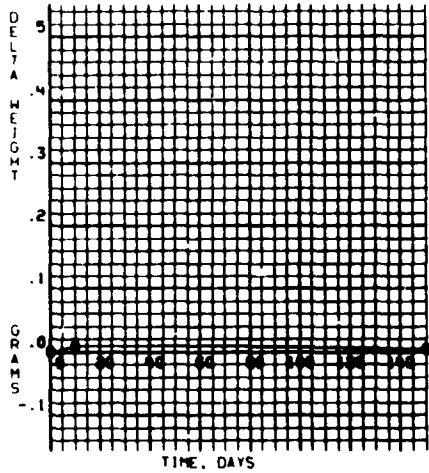
F	DEG R	DEG K	GRAMS
I	-	-	.42975+01
	660.	367.	.41685+01
I	-	-	.42230+01
	530.	294.	.41635+01
I	-	-	.42110+01
	140.	78.	.42035+01
I	-	-	.42000+01
	37.	21.	.42010+01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.42755+01
	24.0	.42170+01
I	.0	.43175+01
	72.0	.42155+01
I	.0	.43870+01
	240.0	.42290+01

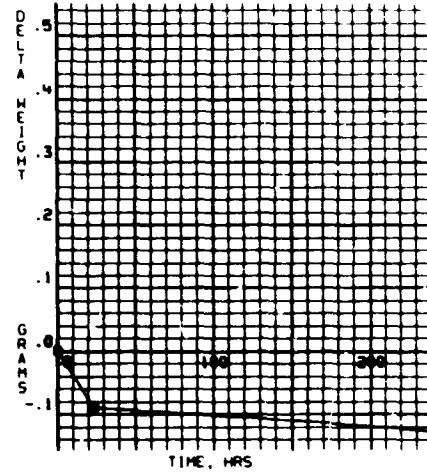
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

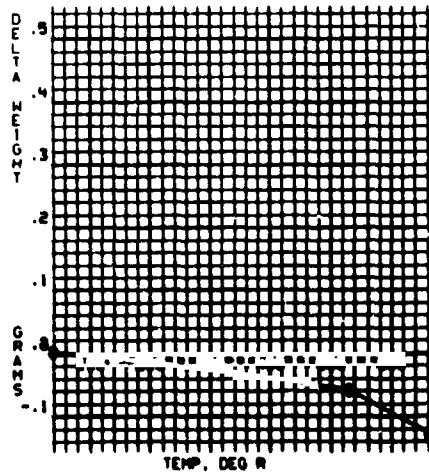


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

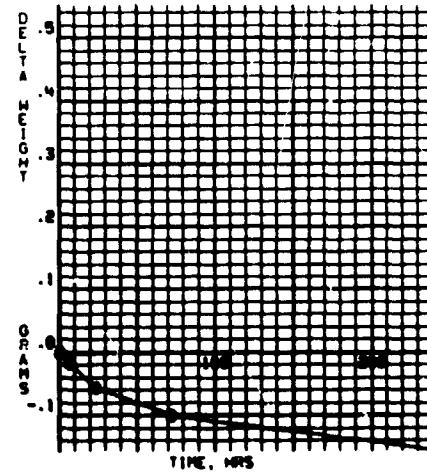
PROPERTY - DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - NYLON NET
PROPERTY - WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.43545+01
	12.0	.43500+01
	.0	.43390+01
	24.0	.43580+01
	.0	.43515+01
	72.0	.43730+01

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.43910+01
	12.0	.47485+01
	.0	.43990+01
	24.0	.49500+01
	.0	.44040+01
	72.0	.49320+01

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	GRAMS
	.0	.44150+01
	.5	.44125+01
	.0	.44265+01
	2.0	.44310+01
	.0	.44630+01
	24.0	.44925+01

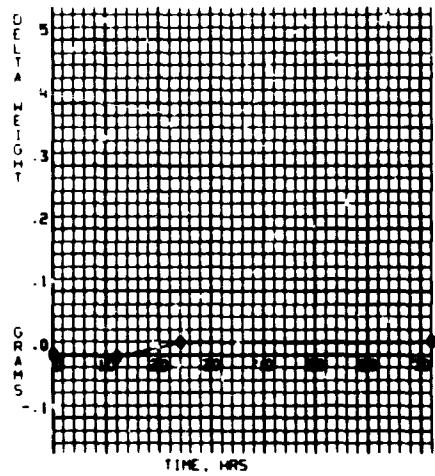
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.44315+01
	4.2	.44180+01
	.0	.43870+01
	150.0	.43640+01

NOTE.

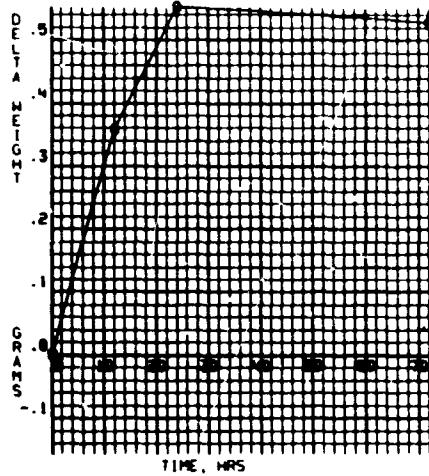
- SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
- ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
- THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
- THE E+01 ETC. IS THE EXPONENT OF 10
- THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - NYLON NET

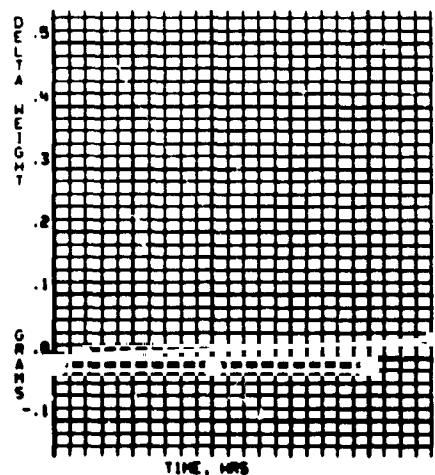


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

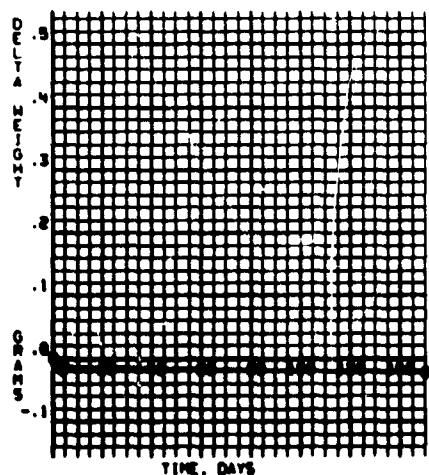
PROPERTY - DELTA WEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -NYLON NET
PROPERTY -WEIGHT

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.43340+01
	4.2	.42400+01
I	.0	.43515+01
	150.0	.43370+01

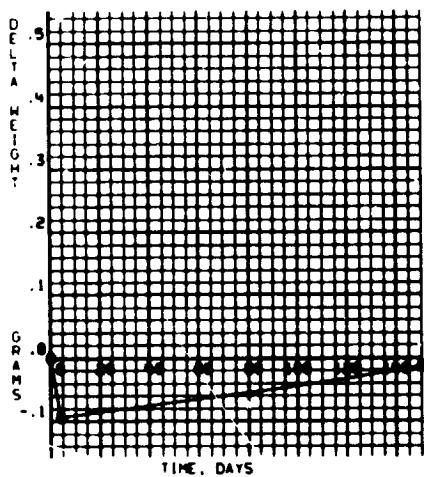
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P. TORR	GRAMS
I	.000		.43325+01
	.100-02		.43280+01
I	.000		.43000+01
		.760+03	SAMPLE DESTROYED

NOTE.
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

PROPERTY - DELTA WEIGHT



ENVIRONMENT B(ef)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - NYLON NET

PROPERTY - LAYER DENSITY

(REF STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 1

CONTROL, 70 DEG F (21 DEG C)

F	DAYS	NO/IN	NO/CM
	.0	.123+03	.486+02
	10.0	.127+03	.499+02
	150.0	.119+03	.469+02

ENVIRONMENT 2 (AB)

VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	NO/IN	NO/CM
	24.0	.133+03	.525+02
	240.0	.124+03	.489+02

ENVIRONMENT 2 (BCDE)

VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

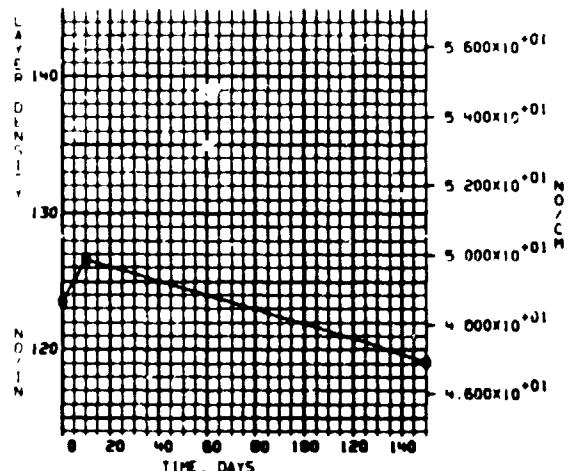
F	DEG R	DEG K	NO/IN	NO/CM	F	HOURS	NO/IN	NO/CM
660.	367.	.124+03	.489+02		24.0		.126+03	.496+02
530.	294.	.139+03	.547+02		72.0		.121+03	.478+02
140.	78.	.145+03	.571+02		240.0		.128+03	.505+02
37.	21.	.114+03	.448+02					

ENVIRONMENT 3

HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

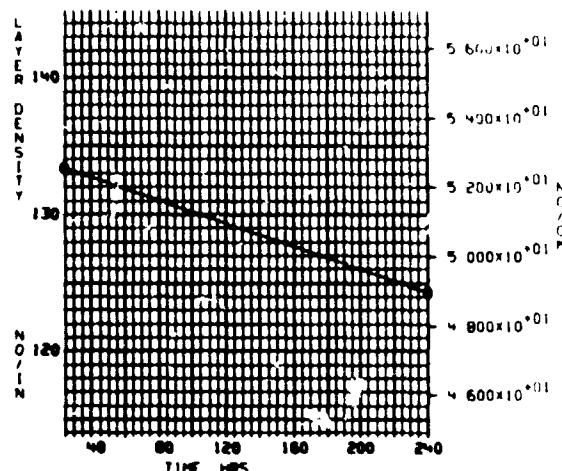
- NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL NYLON NET

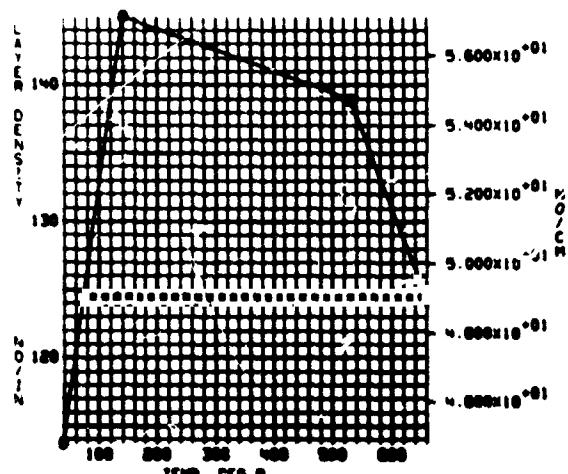


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

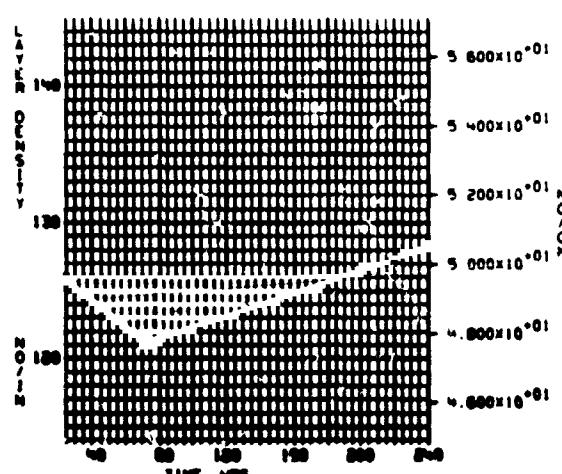
PROPERTY - LAYER DENSITY



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - NYLON NET
 PROPERTY - LAYER DENSITY
 (FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
 INITIAL THICKNESS FOR 20 LAYERS)

ENVIRON 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	NO/IN	NO/CM
	12.0	.122+03	.480+02
	24.0	.128+03	.505+02
	72.0	.128+03	.505+02

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	NO/IN	NO/CM
	12.0	.133+03	.525+02
	24.0	.127+07	.502+02
	72.0	.128+03	.505+02

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

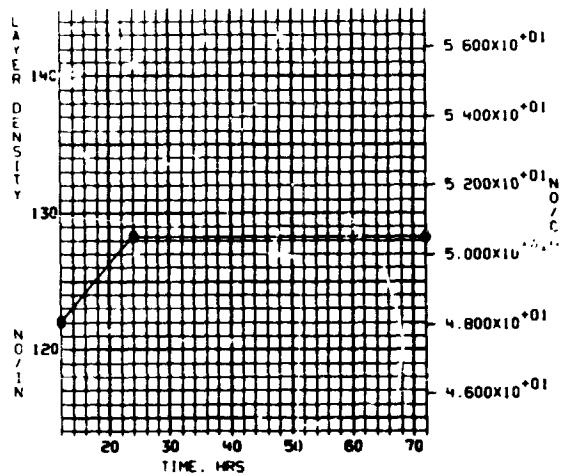
F	HOURS	NO/IN	NO/CM
	.5	.122+03	.480+02
	2.0	.139+03	.547+02
	24.0	.139+03	.547+02

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYs	NC/IN	NO/CM
	4.2	.123+03	.483+02
	150.0	.123+03	.486+02

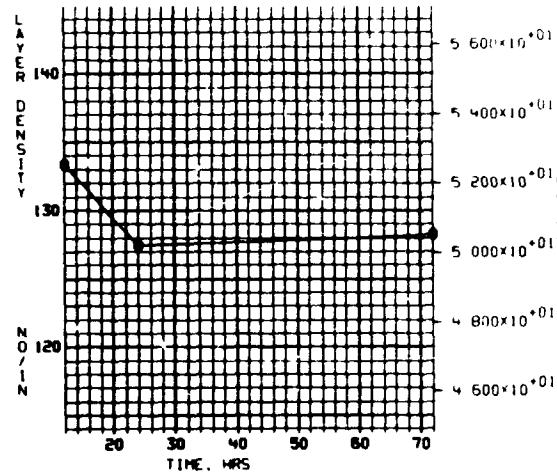
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 LTC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

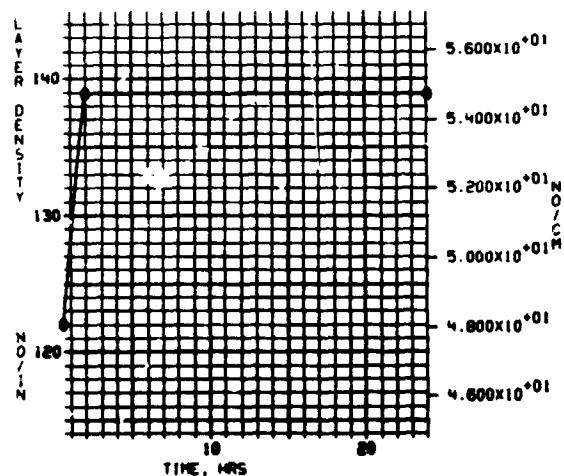


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

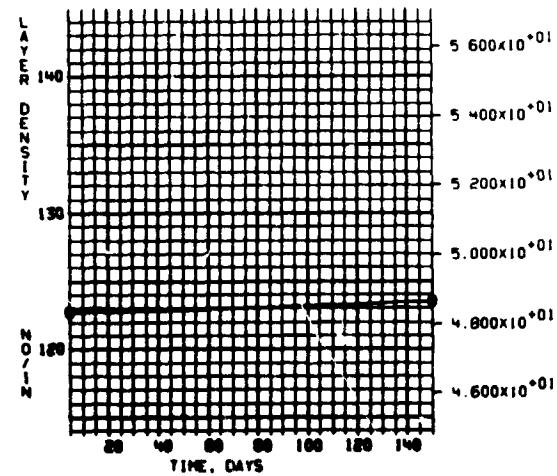
PROPERTY - LAYER DENSITY



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - NYLON NET
PROPERTY - LAYER DENSITY

(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

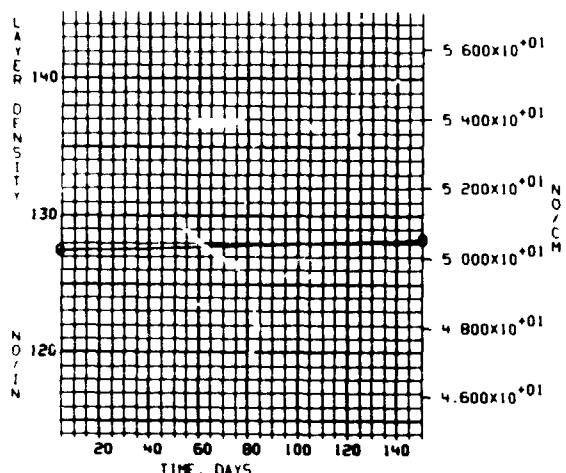
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	DAYS	NO/IN	NO/CM	F	F	P.P. TORR	NO/IN	NO/CM
	4.2	.127+03	.502+02			.100-02	.121+03	.478+02
	150.0	.128+03	.505+02			.760+03	.200+02	.788+01

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

PROPERTY - LAYER DENSITY



ENVIRONMENT B(EEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

MATERIAL - NYLON NET
PROPERTY - TENSILE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DEG DAYS	LB/IN	N/M
	.0	.232+01	.407+03
	.0	.320+01	.561+03
	10.0	.266+01	.466+03
	10.0	.263+01	.461+03
	150.0	.250+01	.439+03
	150.0	.237+01	.416+03

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.243+01	.425+03
	24.0	.235+01	.411+03
	240.0	.209+01	.366+03
	240.0	.186+01	.326+03

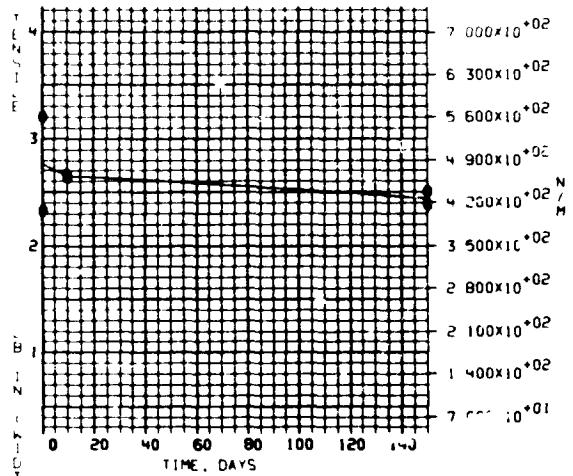
ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	DEG R	DEG K	LB/IN	N/M	F	HOURS	LB/IN	N/M
660.	367.		.209+01	.366+03		24.0	.266+01	.466+03
660.	367.		.186+01	.326+03		24.0	.263+01	.461+03
530.	294.		.286+01	.502+03		72.0	.230+01	.402+03
530.	294.		.243+01	.425+03		72.0	.274+01	.479+03
140.	78.		.237+01	.416+03		240.0	.307+01	.538+03
140.	78.		.261+01	.457+03		240.0	.423+01	.742+03
37.	21.		.219+01	.384+03				
37.	21.		.258+01	.452+03				

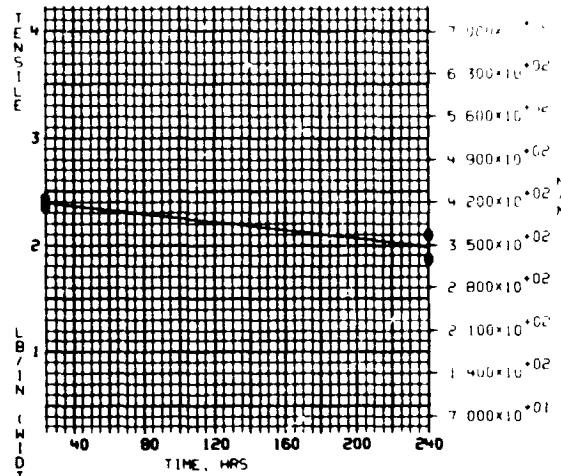
NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL I)
 • ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 • THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 • THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - NYLON NET

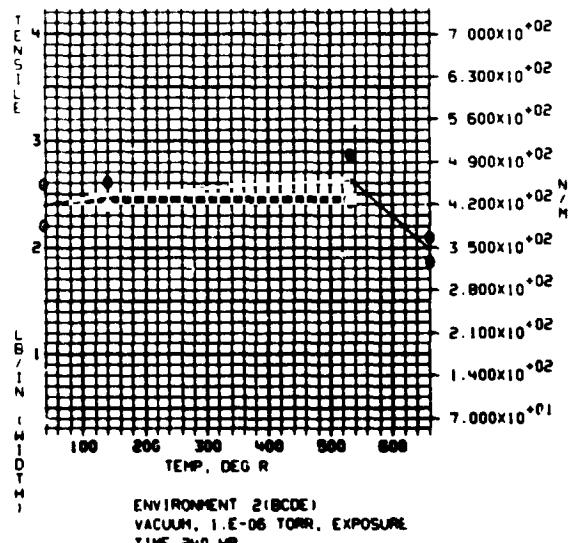


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

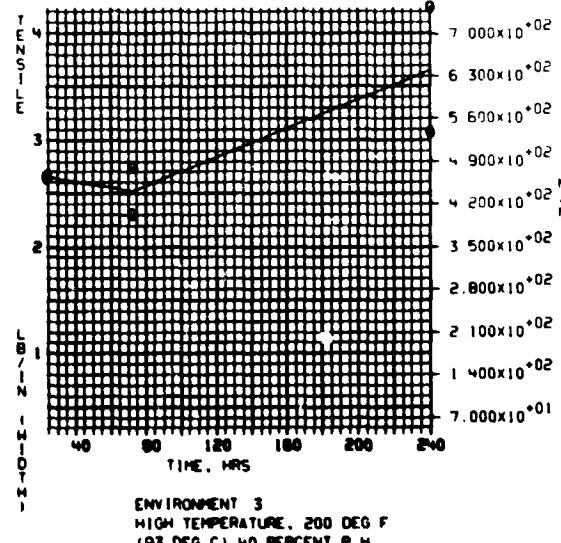
PROPERTY - TENSILE



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -NYLON NET
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.372+01	.651+03
	12.0	.212+01	.371+03
	24.0	.213+01	.373+03
	24.0	.253+01	.443+03
	72.0	.317+01	.556+03
	72.0	.253+01	.443+03

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.258+01	.452+03
	12.0	.258+01	.452+03
	24.0	.230+01	.402+03
	24.0	.297+01	.520+03
	72.0	.299+01	.525+03
	72.0	.258+01	.452+03

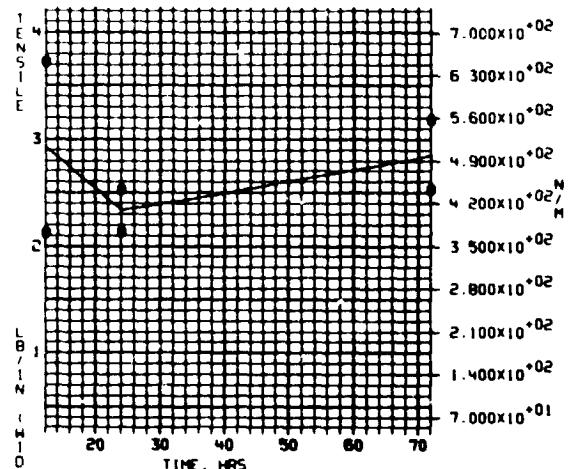
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	LB/IN	N/M	F	DAYS	LB/IN	N/M
	.5	.274+01	.479+03		4.2	.292+01	.511+03
	.5	.255+01	.448+03		4.2	.289+01	.506+03
	2.0	.302+01	.529+03		150.0	.253+01	.443+03
	2.0	.266+01	.466+03		150.0	.274+01	.479+03
	24.0	.258+01	.452+03				
	24.0	.276+01	.484+03				

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

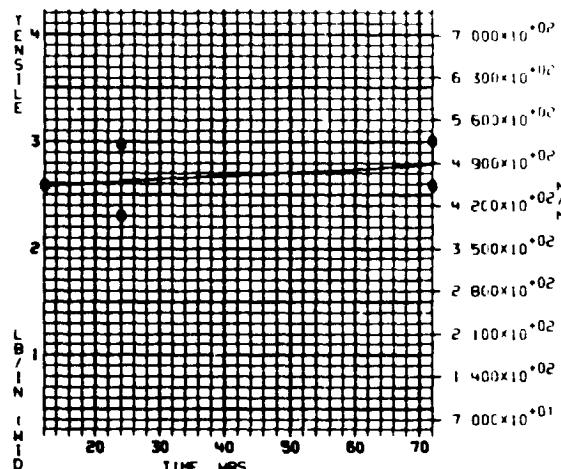
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

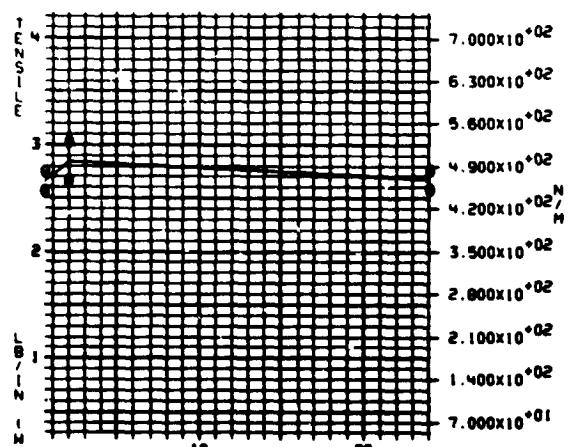


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

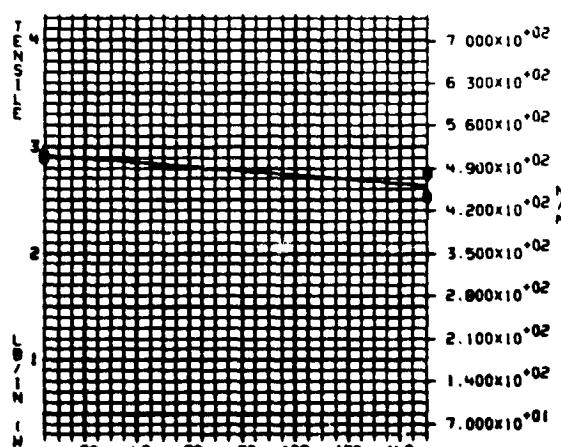
PROPERTY- TENSILE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -NYLON NET
PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

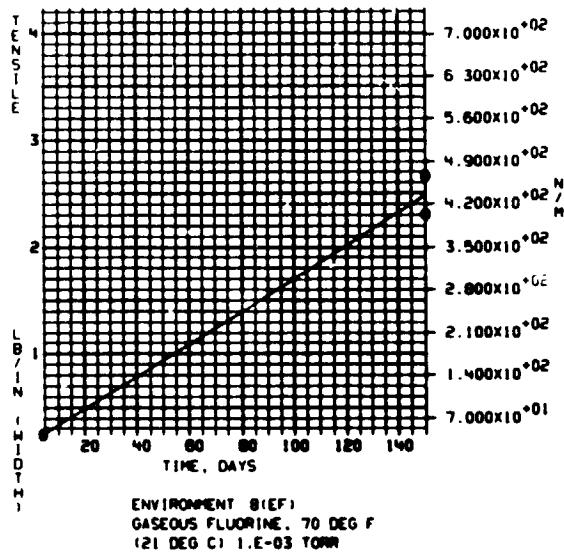
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F		DAYS	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
		4.2	SAMPLE DESTROYED				.100-02		.281+01	.493+03
		4.2	.232+00	.407+02			.100-02		.284+01	.497+03
		150.0	.266+01	.466+03			.760+03		SAMPLE DESTROYED	
		150.0	.230+01	.402+03			.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NYLON NET

PROPERTY - TENSILE



PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = NYLON NET

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DFG.R (365 DEG.K)

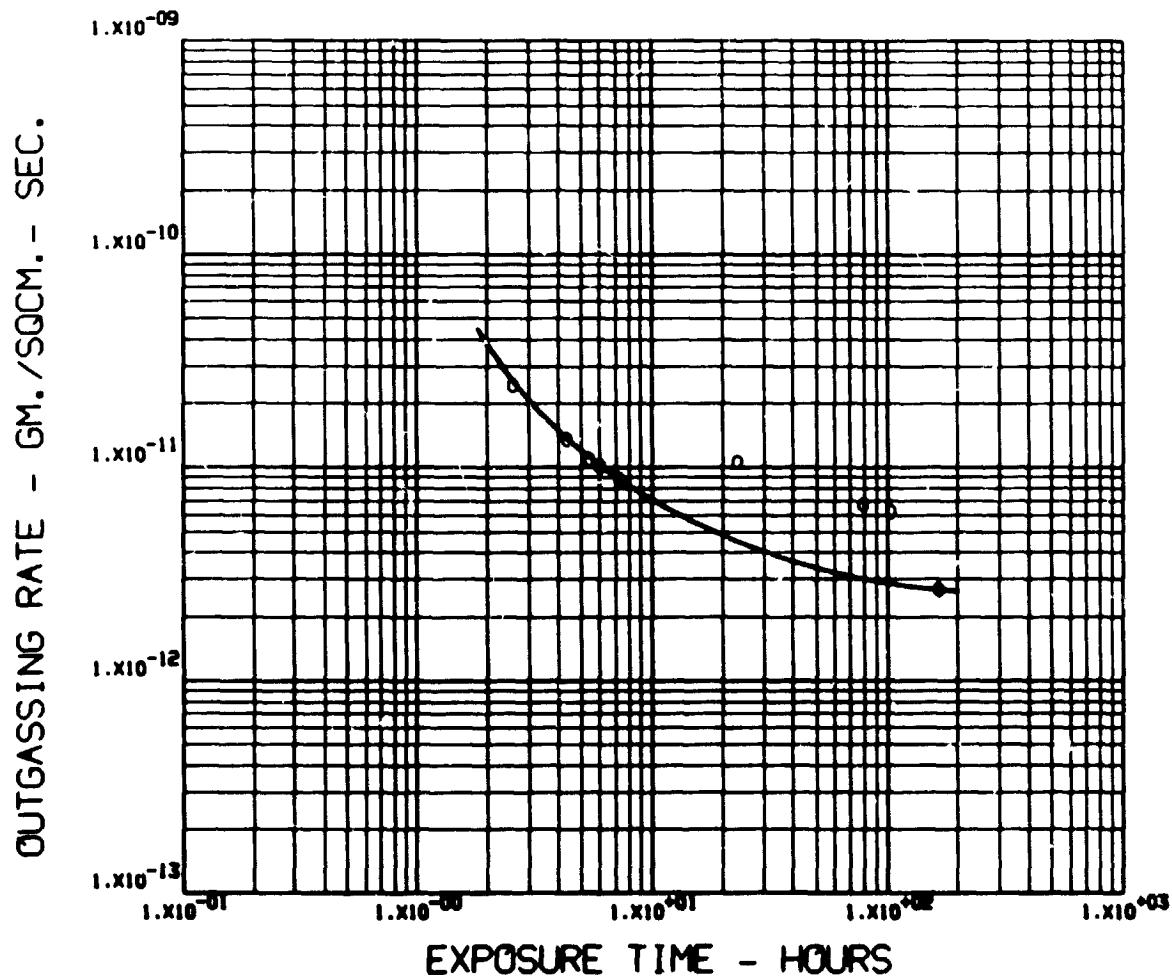
TEST DATE 042071

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 2.4350 GMS. SAMPLE AREA = 3510. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.55	2.42-11	.59	.04	.37
4.32	1.34-11	.81	.14	.06
5.35	1.09-11	.80	.18	.03
5.49	1.00-11	.89	.10	.01
7.27	8.84-12	.88	.09	.03
22.77	1.06-11	.87	.10	.03
78.44	6.72-12	.95	.04	.01
102.77	6.14-12	.96	.01	.03
165.77	2.68-12	.93	.05	.02

PROPERTY - OUTGASSING
MATERIAL - NYLON NET



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = NYLON NET

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

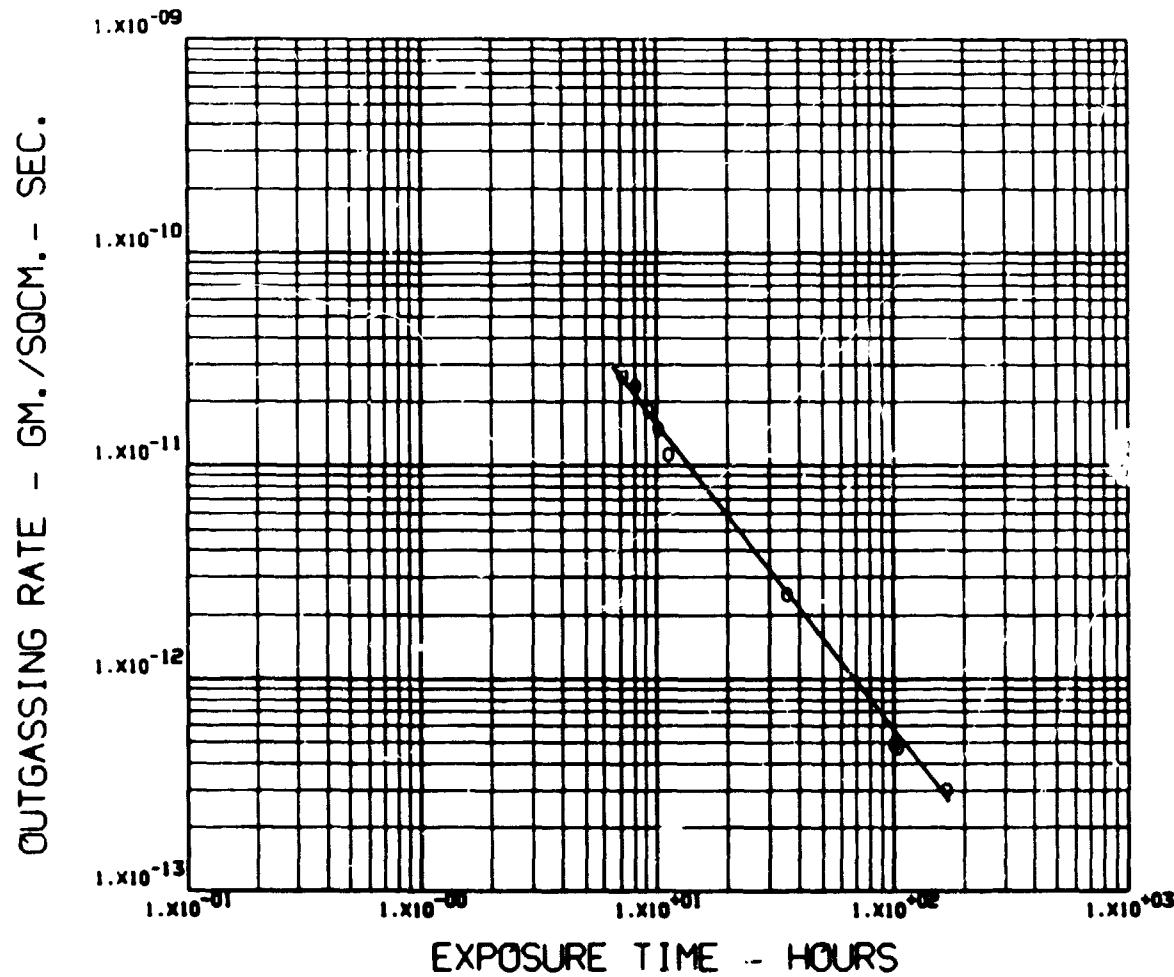
TEST DATE 020871

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 2.4155 GMS. SAMPLE AREA = 3408. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./50CM. ² -SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
7.08	2.65-11	.89	.11	.00
8.00	2.33-11	.89	.11	.00
9.17	1.80-11	.96	.04	.00
10.08	1.49-11	.97	.02	.00
11.08	1.12-11	.97	.03	.00
35.17	2.46-12	.93	.06	.01
100.00	4.90-13	.80	.20	.00
103.87	4.74-13	.84	.16	.01
167.58	3.01-13	.83	.16	.01

PROPERTY- OUTGASSING
MATERIAL- NYLON NET



ENVIRONMENT 2C VACUUM. 10-6 TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - NYLON NET

ENVIRONMENT 4A

VACUUM, 1UE-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DFG.K)

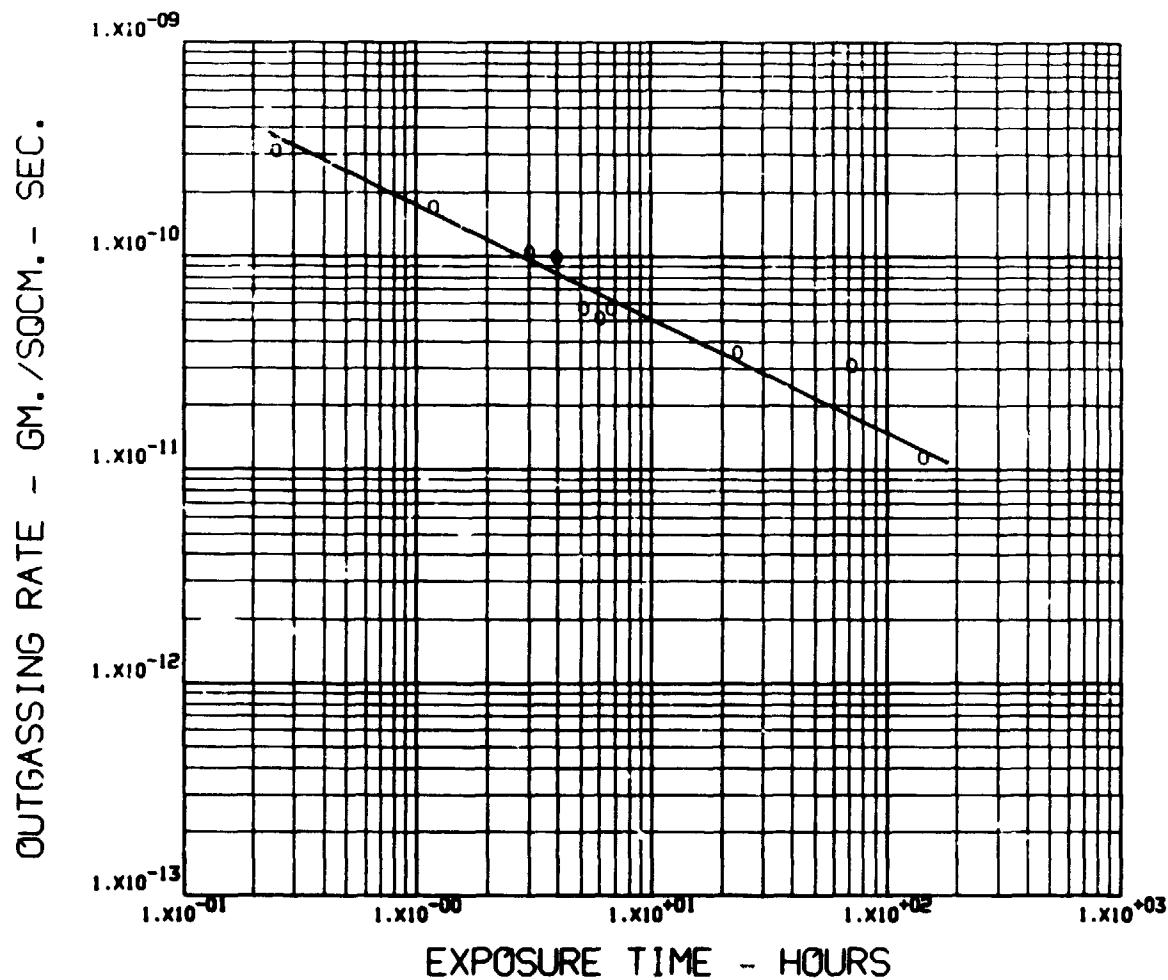
TEST DATE 052572

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 2.4315 GMS. SAMPLE AREA = 3501. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.25	3.09-10	.99	.01	.00
1.17	1.69-10	.44	.00	.56
3.00	1.04-10	.44	.00	.56
3.92	0.84-11	.40	.00	.60
5.17	5.67-11	.99	.00	.01
6.08	5.10-11	.99	.00	.00
6.75	5.67-11	.99	.00	.00
23.33	3.51-11	.90	.00	.10
71.50	3.06-11	.76	.00	.23
142.67	1.13-11	1.00	.00	.00

PROPERTY - OUTGASSING
MATERIAL - NYLON NET



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - NYLON NET

ENVIRONMENT 4B

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

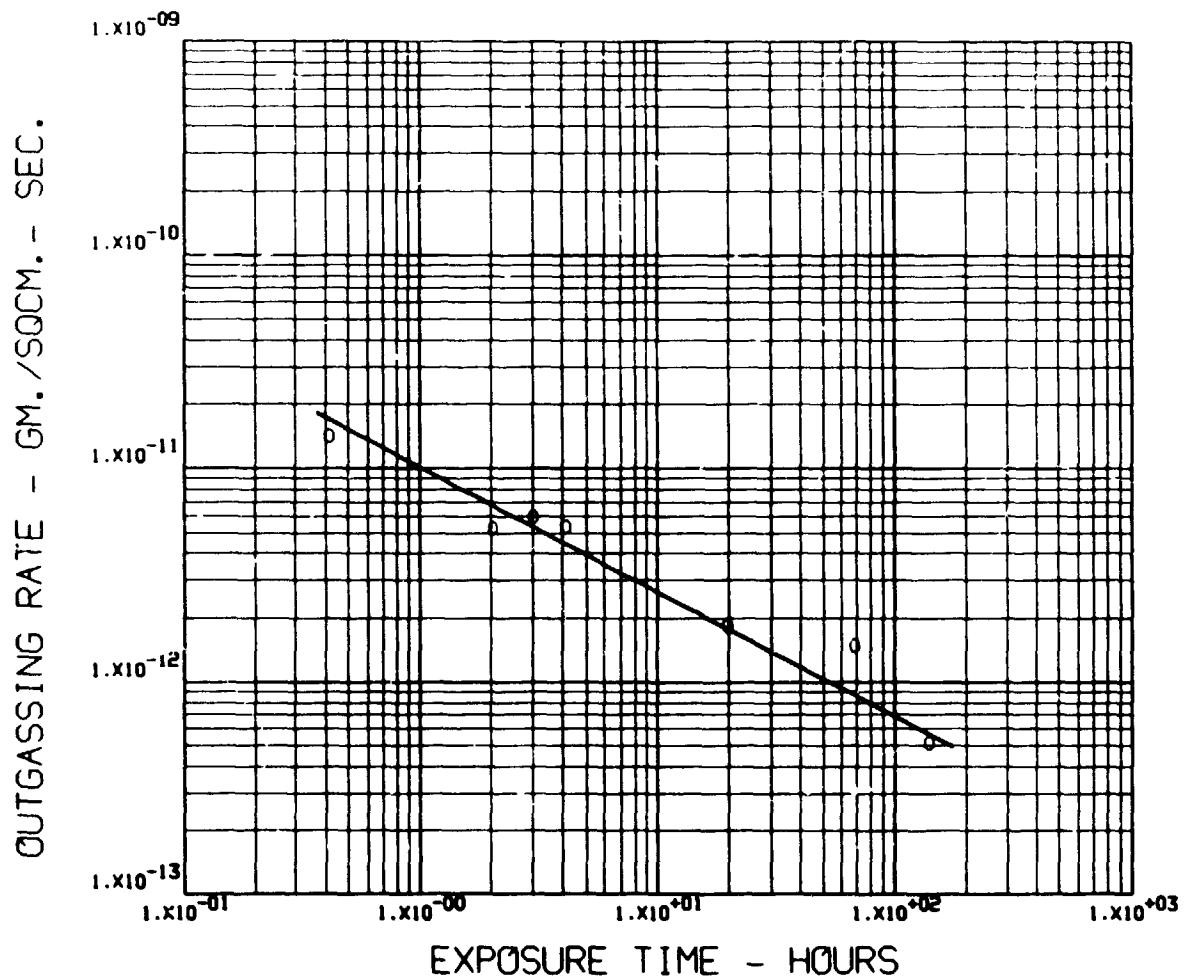
TEST DATE 053171

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 2.4350 GMS. SAMPLE AREA = 3501. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.41	1.41-11	.24	.26	.50
2.01	5.22-12	.15	.36	.49
3.00	5.91-12	.15	.45	.40
4.08	5.33-12	.13	.32	.55
19.58	1.80-12	.25	.38	.37
67.66	1.46-12	.12	.35	.52
139.25	5.13-13	.11	.39	.50

PROPERTY - OUTGASSING
MATERIAL - NYLON NET



ENVIRONMENT 4B VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -DACRON NET
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.41345+01
	10.0	.41265+01
I	.0	.41435+01
	150.0	.41320+01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.40825+01
	24.0	.40805+01
I	.0	.41930+01
	240.0	.41190+01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

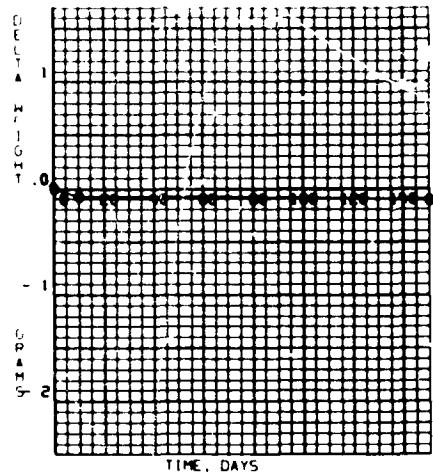
F	DEG R	DEG K	GRAMS
I	-	-	.41930+01
	660.	367.	.41190+01
I	-	-	.42365+01
	530.	294.	.42050+01
I	-	-	.42365+01
	140.	78.	.42175+01
I	-	-	.42920+01
	37.	21.	.42220+01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.41745+01
	24.0	.41580+01
I	.0	.42275+01
	72	.41875+01
I	.0	.41930+01
	240	.39430+01

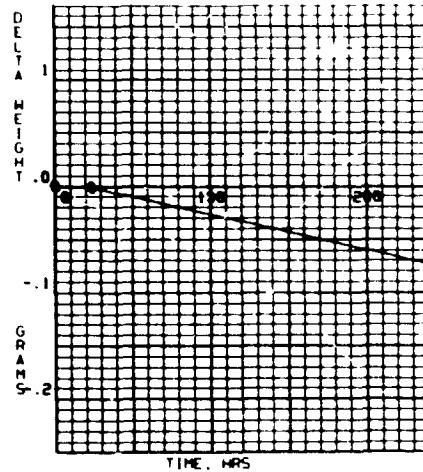
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: DACRON NET

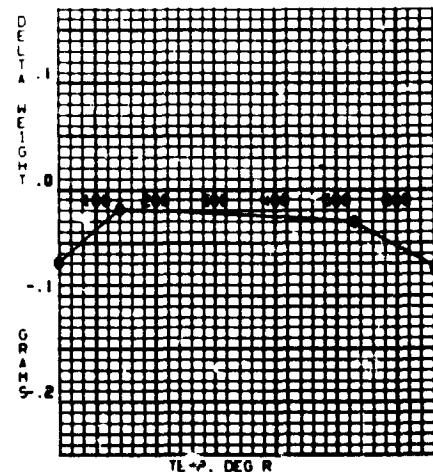


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

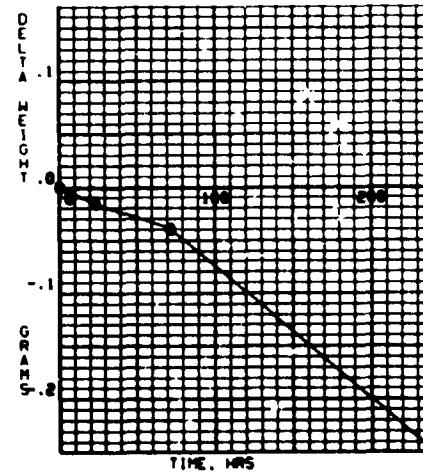
PROPERTY: DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DACRON NET
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.41695+01
	12.0	.41240+01
	.0	.41470+01
	24.0	.41365+01
	.0	.42045+01
	72.0	.41700+01

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.42500+01
	12.0	.43460+01
	.0	.41205+01
	24.0	.42535+01
	.0	.42025+01
	72.0	.43725+01

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

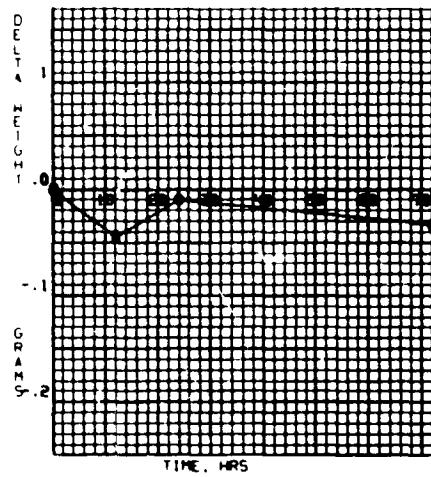
F	HOURS	GRAMS
	.0	.42485+01
	.5	.42055+01
	.0	.41900+01
	2.0	.41365+01
	.0	.41560+01
	24.0	.41500+01

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.41020+01
	4.2	.40770+01
	.0	.40740+01
	150.0	.40720+01

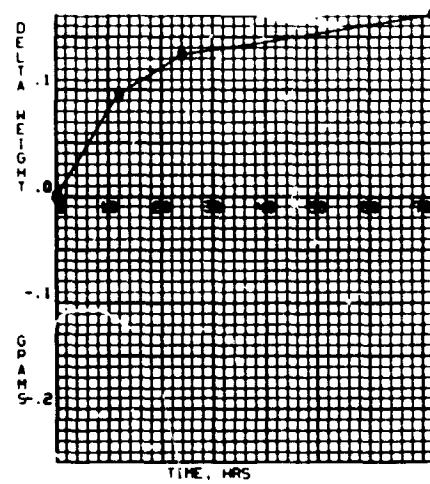
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - DACRON NET

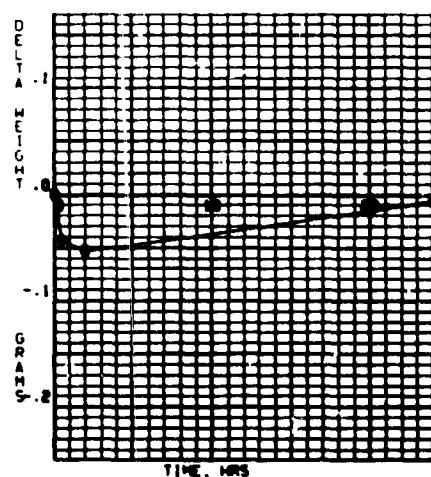


ENVIRONMENT 5
95 PERCENT R H 55 DEG F
(135 DEG C)

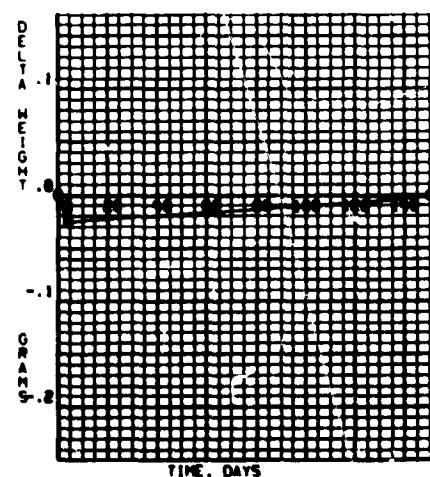
PROPERTY - DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R H /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DACRON NET
PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	U DAYS	GRAMS
I	.0	.41785+01
	4.2	.41990+01
I	.0	.40845+01
	150.0	.41805+01

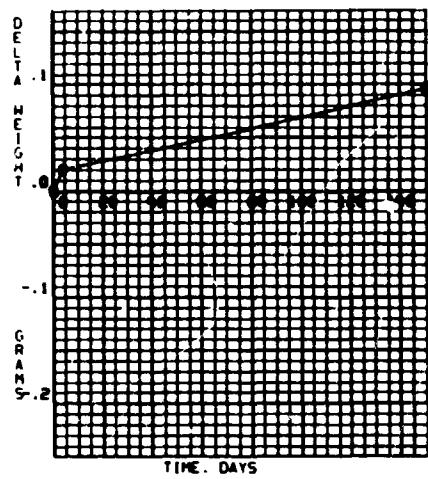
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P. TORR	GRAMS
I	.000	.41780+01	
	.100-02	.41775+01	
I	.000	.41855+01	
	.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DACRON NET

PROPERTY - DELTA WEIGHT



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -DACRON NET
 PROPERTY -LAYER DENSITY
 (FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
 INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	NO/IN	NO/CM
	.0	.185+03	.730+02
	10.0	.172+03	.679+02
	150.0	.155+03	.611+02

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	NO/IN	NO/CM
	24.0	.167+03	.657+02
	240.0	.168+03	.662+02

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R	DEG K	NO/IN	NO/CM
660.	367.	.168+03	.662+02	
530.	294.	.167+03	.657+02	
140.	78.	.182+03	.716+02	
37.	21.	.159+03	.625+02	

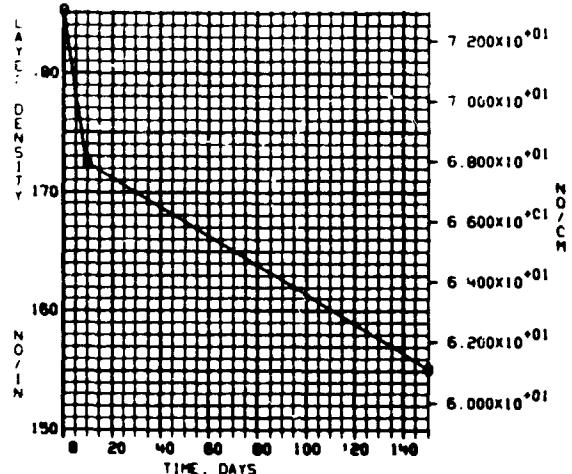
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	NO/IN	NO/CM
	24.0	.167+03	.657+02
	72.0	.152+03	.597+02

NOTE.

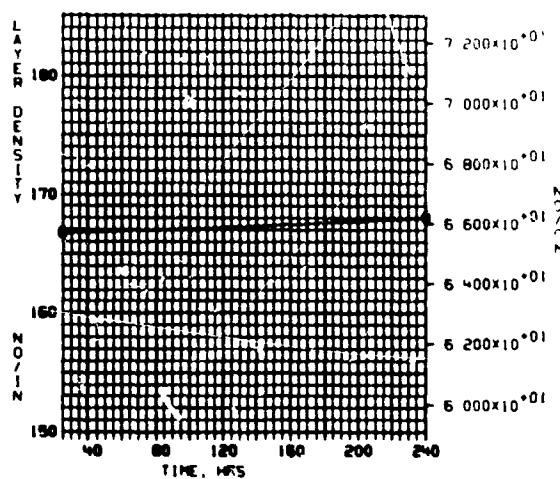
- SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
- ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
- THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
- THE E+01 ETC. IS THE EXPONENT OF 10
- THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - DACRON NET

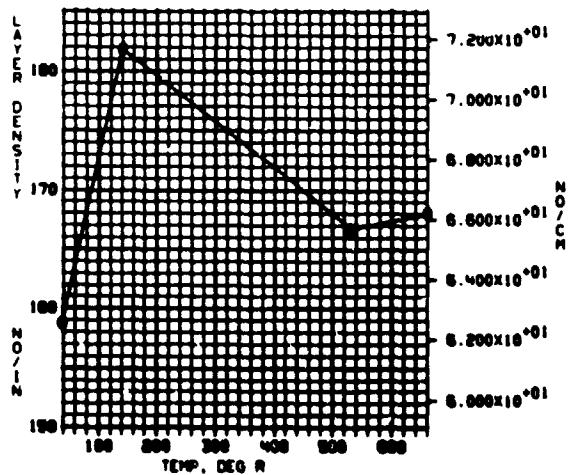


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

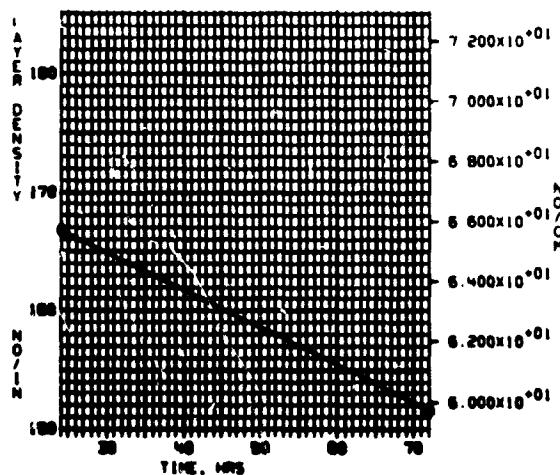
PROPERTY - LAYER DENSITY



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -DACRON NET
PROPERTY -LAYER DENSITY

(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

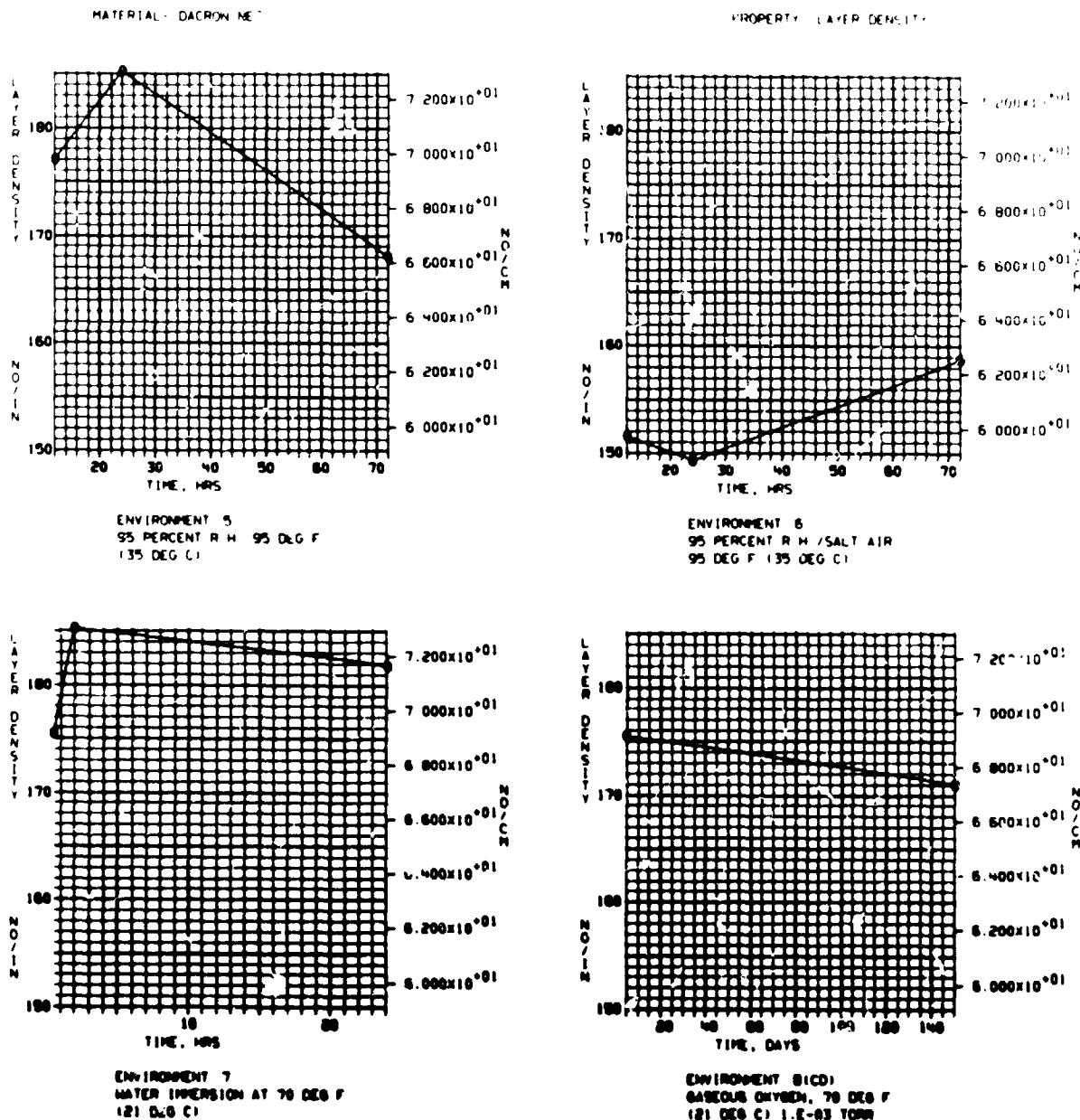
F	HOURS	NO/IN	NO/CM	F	HOURS	NO/IN	NO/CM
	12.0	.177+03	.697+02		12.0	.152+03	.597+02
	24.0	.185+03	.730+02		24.0	.149+03	.588+02
	72.0	.168+03	.662+02		72.0	.159+03	.625+02

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASFOLUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	NO/IN	NO/CM	F	DAYS	NO/IN	NO/CM
	.5	.175+03	.691+02		4.2	.175+03	.691+02
	2.0	.185+03	.730+02		150.0	.171+03	.674+02
	24.0	.182+03	.716+02				

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN



MATERIAL - DACRON NET
PROPERTY - LAYER DENSITY
(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

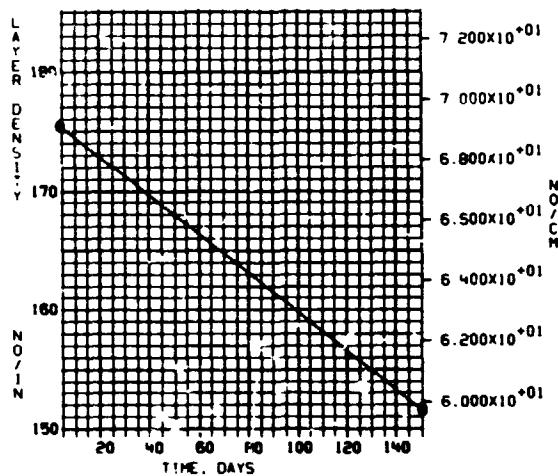
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	DAY	NO/IN	NO/CM	F	F	P.P.	TORR	NO/IN	NO/CM
	4.2	.175+03	.691+02			.100-02		.212+03	.796+12
	150.0	.152+03	.597+02			.760+03		SAMPLE DESTROY D	

NOTE. SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL I)
ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 5 PERCENT
THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
. THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- DACRON NET

PROPERTY- LAYER DENSITY



ENVIRONMENT B(EEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

MATERIAL -DACRON NET
PROPERTY -TENSILE

ENVIRONMENT 1				ENVIRONMENT 2 (AB)			
CONTROL, 70 DEG F (21 DEG C)				VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)			
F	DAYS	LB/IN	N/M	F	HOURS	LB/IN	N/M
.0		.467+01	.818+03				
.0		.379+01	.665+03	24.0		.354+01	.619+03
10.0		.426+01	.746+03	24.0		.542+01	.950+03
10.0		.441+01	.773+03	240.0		.320+01	.561+03
150.0		.441+01	.773+03	240.0		.475+01	.832+03
150.0		.372+01	.651+03				

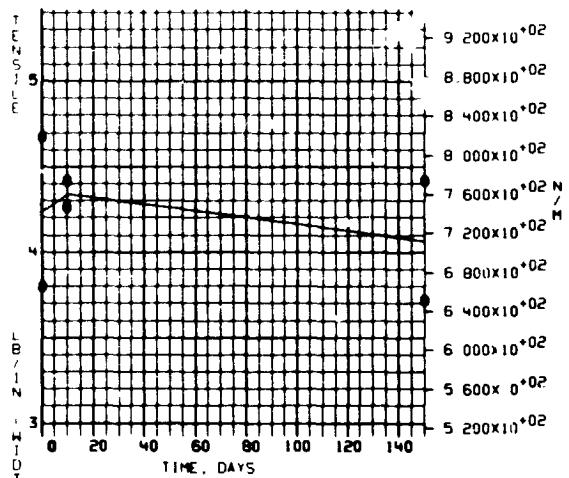
ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	DEG R	DEG K	LB/IN	N/M	F	HOURS	LB/IN	N/M
660.	367.	.320+01	.561+03		24.0		.452+01	.791+03
660.	367.	.475+01	.832+03		24.0		.459+01	.805+03
530.	294.	.459+01	.805+03		72.0		.472+01	.827+03
530.	294.	.493+01	.864+03		72.0		.428+01	.751+03
140.	78.	.465+01	.814+03		240.0		.356+01	.624+03
140.	78.	.431+01	.755+03		240.0		.462+01	.809+03
37.	21.	.526+01	.922+03					
37.	21.	.452+01	.791+03					

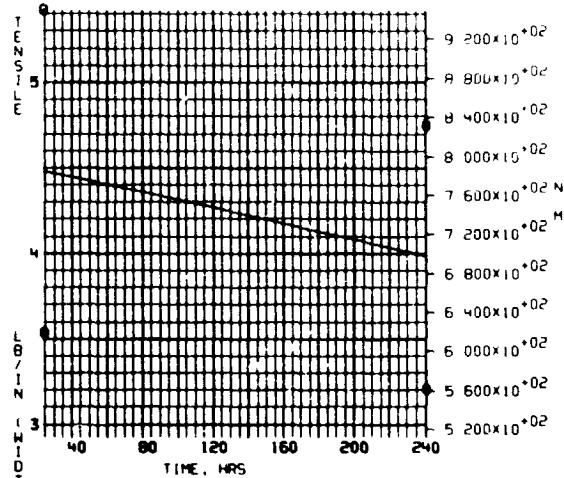
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL DACRON NET

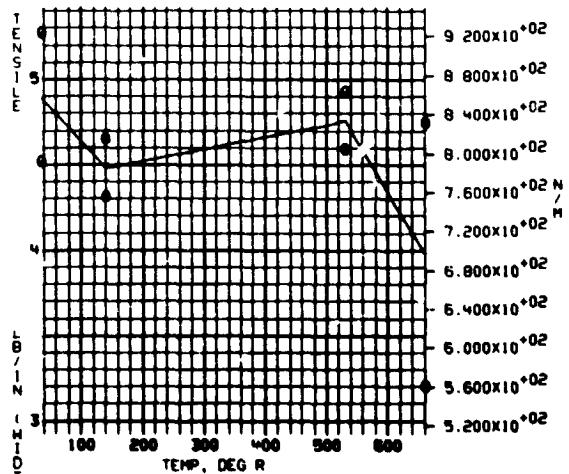


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

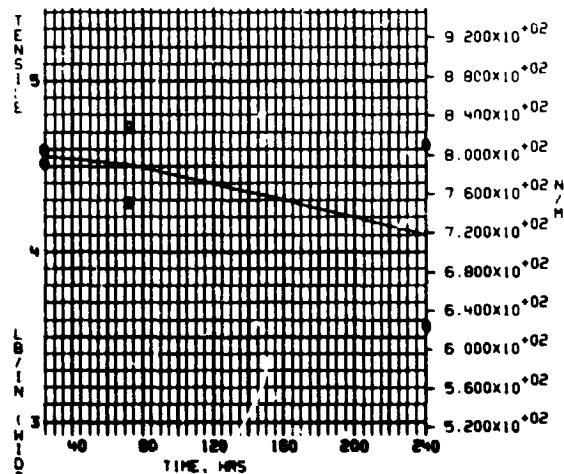
PROPERTY TENSILE



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - DACRON NET
PROPERTY - TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.354+01	.619+03
	12.0	.374+01	.656+03
	24.0	.439+01	.769+03
	24.0	.503+01	.882+03
	72.0	.403+01	.705+03
	72.0	.392+01	.687+03

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.418+01	.732+03
	12.0	.446+01	.782+03
	24.0	.465+01	.814+03
	24.0	.405+01	.710+03
	72.0	.431+01	.755+03
	72.0	.392+01	.687+03

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

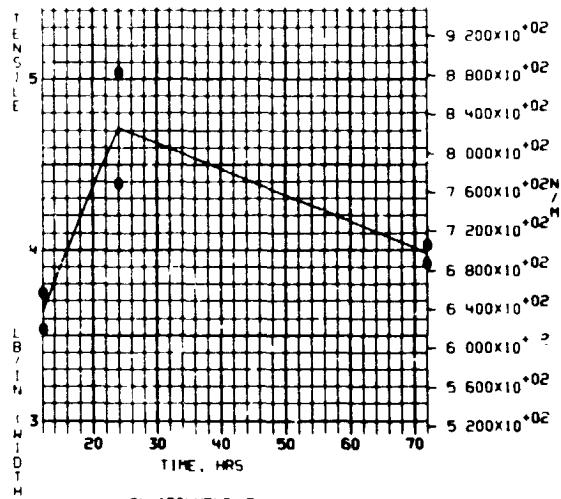
F	HOURS	LB/IN	N/M
	.5	.441+01	.773+03
	.5	.480+01	.841+03
	2.0	.462+01	.809+03
	2.0	.428+01	.751+03
	24.0	.405+01	.710+03
	24.0	.475+01	.832+03

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

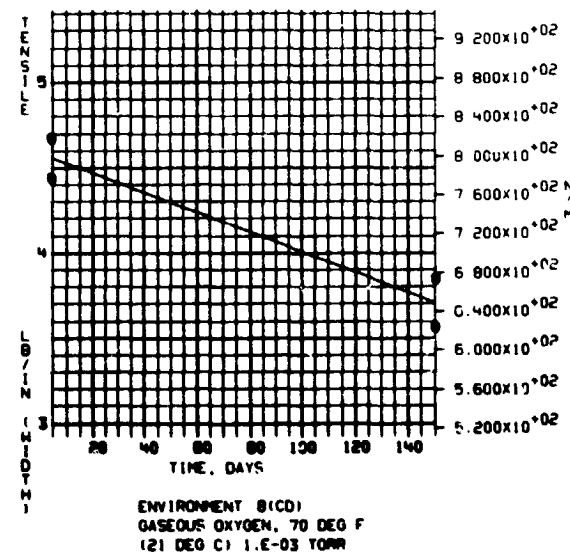
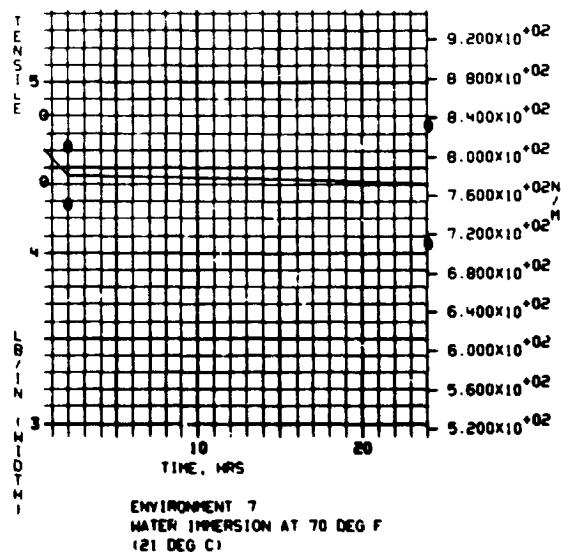
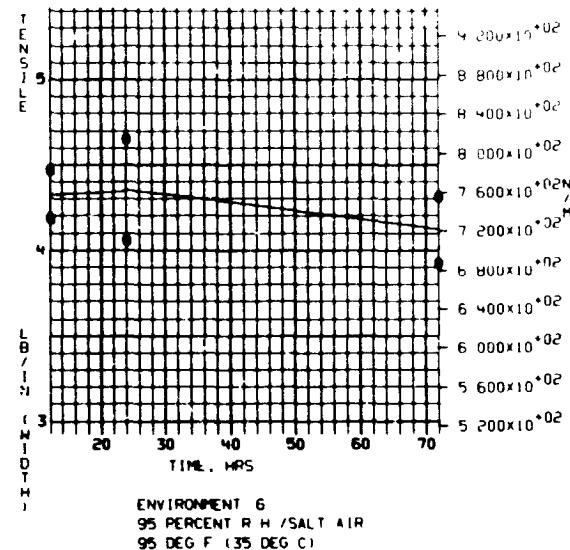
F	DAYs	LB/IN	N/M
	4.2	.467+01	.818+03
	4.2	.444+01	.778+03
	150.0	.356+01	.624+03
	150.0	.385+01	.674+03

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DACRON NET



PROPERTY - TENSILE



MATERIAL -DACHON NET
PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

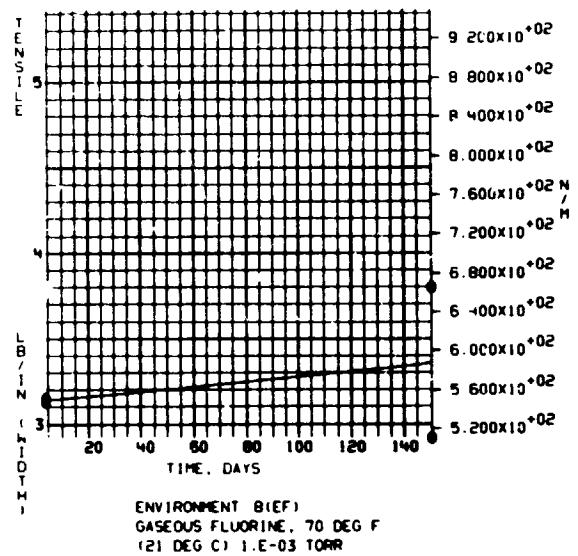
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	DAY(S)	LB/IN	N/M	F	F	P.P.	TGR	LB/IN	N/M
	4.2	.315+01	.552+03			.100-02		.372+01	.651+03
	4.2	.312+01	.547+03			.100-02		.415+01	.728+03
	150.0	.292+01	.511+03			.760+03		SAMPLE DESTROYED	
	150.0	.379+01	.665+03			.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - DACRON NET

PROPERTY - TENSILE



PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DACRON NET

ENVIRONMENT 2R

VACUUM, ICE-116 TORR, 660 DEG.R (365 DEG.K)

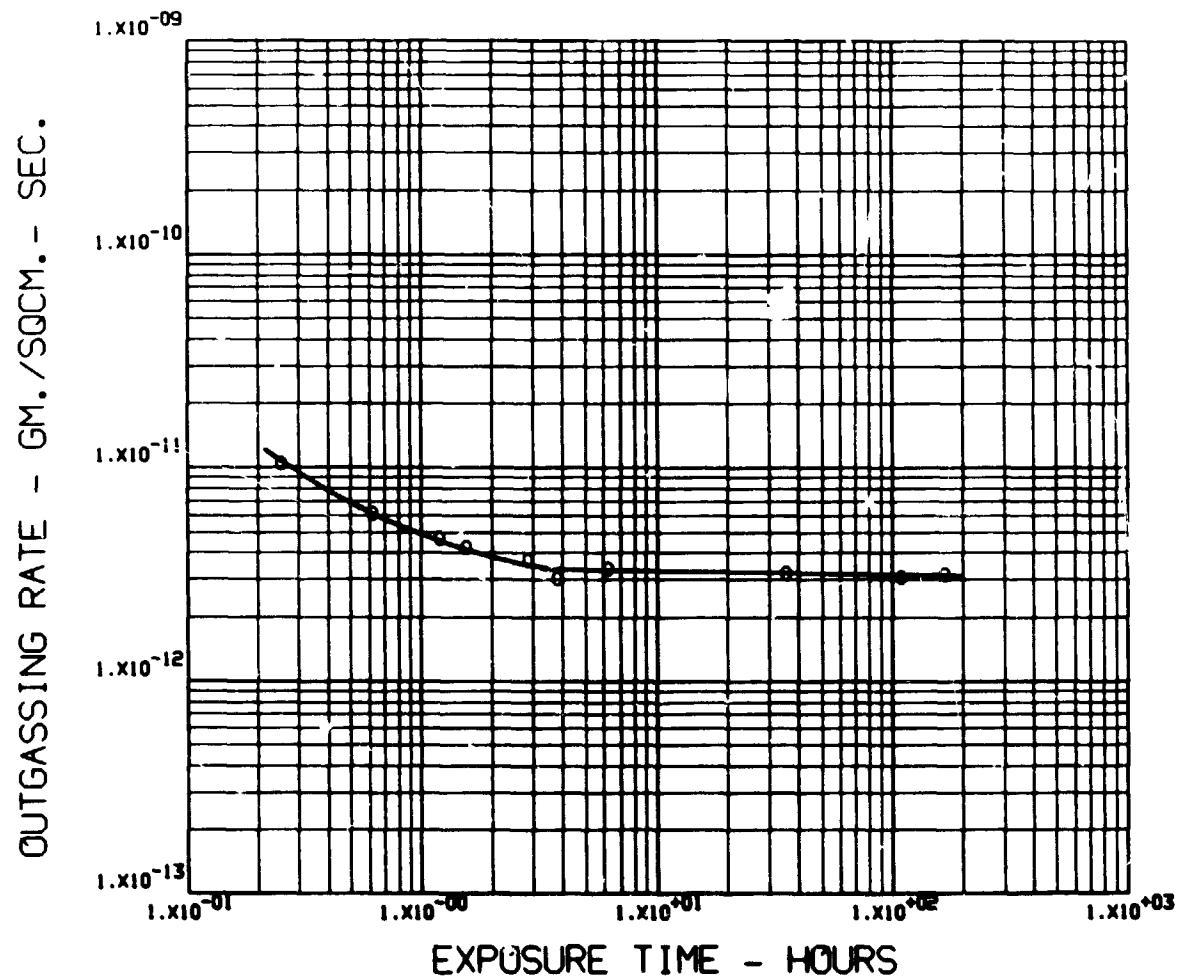
TEST DATE 040571

TEST CHAMFER NO. 1

SAMPLE WEIGHT = 2.6460 GMS. SAMPLE AREA = 181. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SEC.M.-SEC.	GAS COMPONENT FRACTIONS		
		H ₂ O	N ₂	C ₀ 2
.25	1.04-11	.73	.20	.08
.62	6.10-12	.80	.14	.06
1.18	4.63-12	.80	.14	.06
1.53	4.23-12	.79	.14	.06
2.85	3.67-12	.84	.11	.05
3.77	3.00-12	.84	.11	.05
6.25	3.37-12	.84	.10	.06
35.25	3.21-12	.82	.11	.07
108.50	3.06-12	.72	.25	.03
166.92	3.14-12	.80	.15	.05

PROPERTY - OUTGASSING
MATERIAL - DACRON NET



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = DACRON NET

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

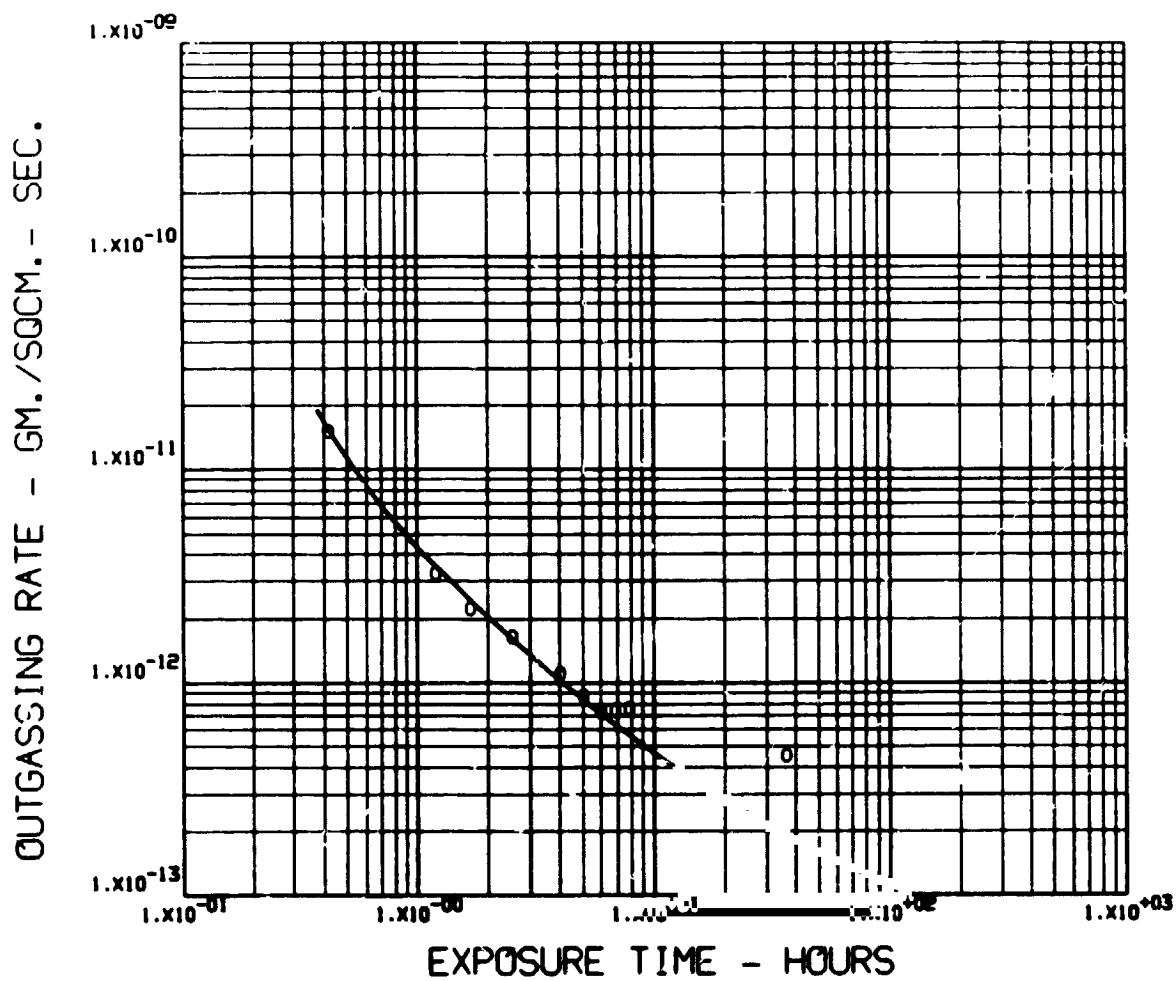
TEST DATE 020971

TEST CHAMBER NO. 2

SAMPLE WEIGHT = .7590 GMS. SAMPLE AREA = 1143. 50.cm.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.42	1.49-11	.45	.37	.17
1.18	3.24-12	.65	.24	.12
1.67	2.22-12	.63	.25	.12
2.50	1.63-12	.52	.33	.15
4.00	1.09-12	.55	.32	.13
5.00	8.56-13	.54	.43	.09
5.98	7.23-13	.40	.44	.15
6.88	7.41-13	.47	.40	.13
7.93	7.50-13	.38	.45	.17
36.25	4.52-13	.24	.57	.20
97.50	1.10-13	.39	.53	.08
167.67	9.10-14	.27	.65	.08

PROPERTY- OUTGASSING
MATERIAL- DACRON NET



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DACHRON NET

ENVIRONMENT 4A

VACUUM, 1.0E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

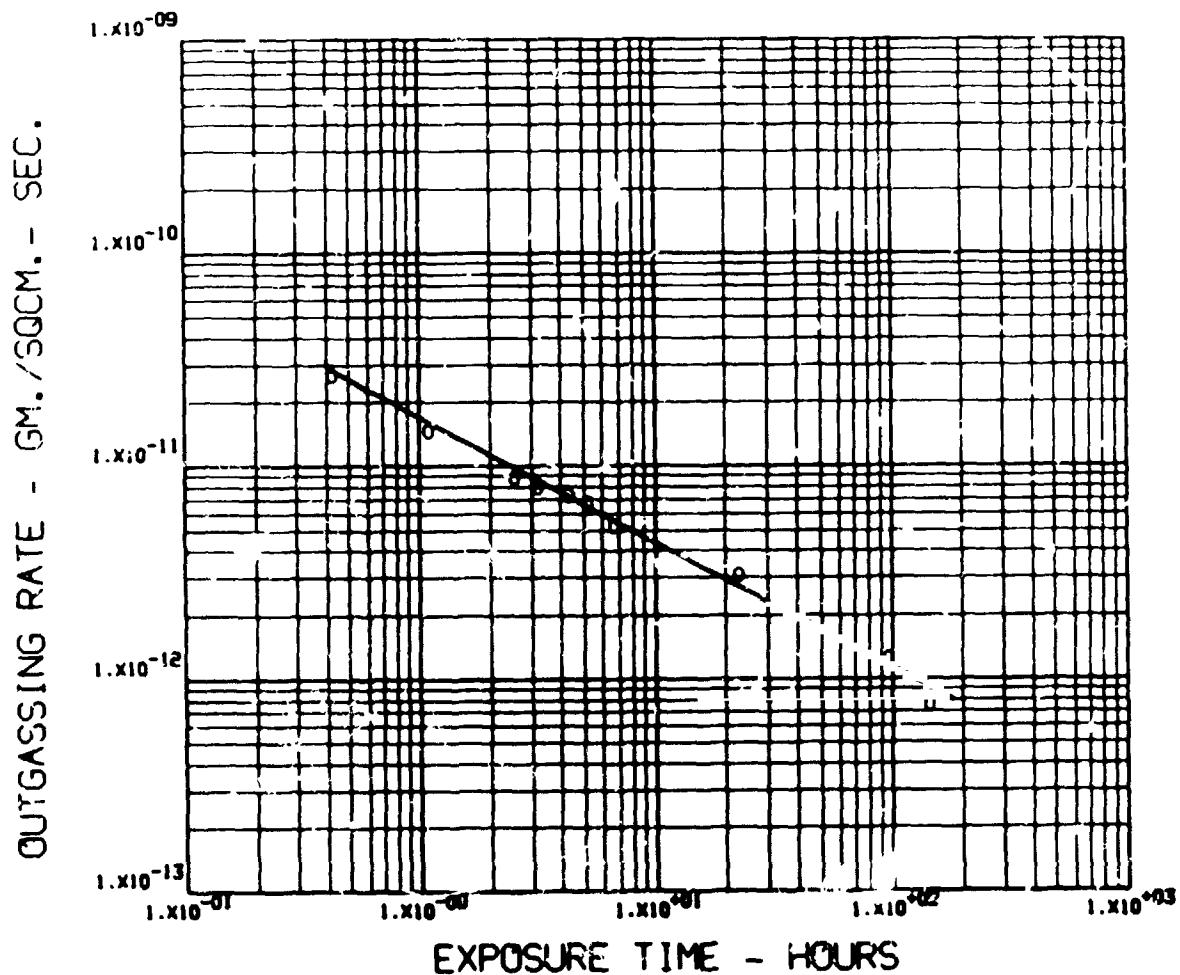
TEST DATE 053072

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 2.5572 GMS. SAMPLE AREA = 4045. 50.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./50CM. ² -SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.42	2.64-11	.50	.01	.49
1.08	1.46-11	.52	.00	.48
2.50	8.79-12	.49	.00	.51
3.17	7.90-12	.57	.00	.43
4.33	7.15-12	.43	.00	.57
5.25	6.63-12	.66	.0	.34
6.67	5.23-12	.60	.0	.40
22.58	3.07-12	.38	.00	.62
56.50	1.24-12	.66	.00	.32
143.00	7.48-13	.68	.07	.31

PROPERTY-- OUTGASSING
MATERIAL - DACRON NET



ENVIRONMENT 4A VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - DACRON NET

ENVIRONMENT 4B

VACUUM, 10E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS. FOLLOWED BY
GASEOUS HELIUM PULSE AT 760 TORR, 530 DEG.R. (294 DEG.K). FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

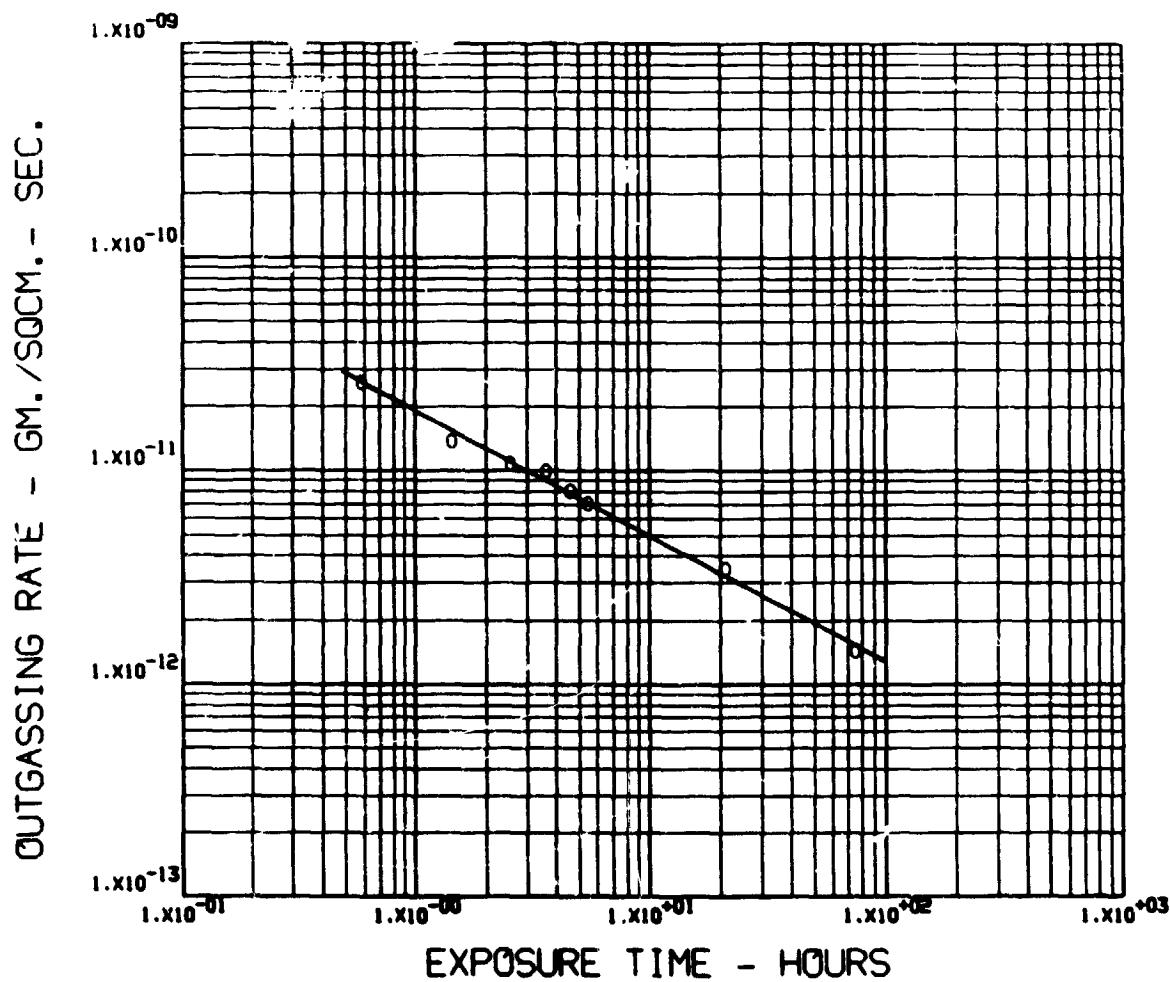
TEST DATE 052671

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 2.9285 GMS. SAMPLE AREA = 4630. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.58	2.57-11	.12	.51	.46
1.41	1.37-11	.20	.39	.41
2.50	1.07-11	.27	.38	.35
3.58	9.95-12	.18	.43	.39
4.58	7.96-12	.22	.40	.38
5.41	7.01-12	.25	.37	.38
20.83	3.47-12	.24	.36	.41
74.25	1.1-12	.19	.39	.42

PROPERTY- OUTGASSING
MATERIAL- DACRON NET



ENVIRONMENT 4B VACUUM, 10-6 TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - TISSUGLAS, 60G
 PROPERTY - WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
	.0	.13415+01
	10.0	.13395+01
	.0	.13354+01
	150.0	.13335+01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
	.0	.13396+01
	24.0	.13355+01
	.0	.13350+01
	240.0	.13320+01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

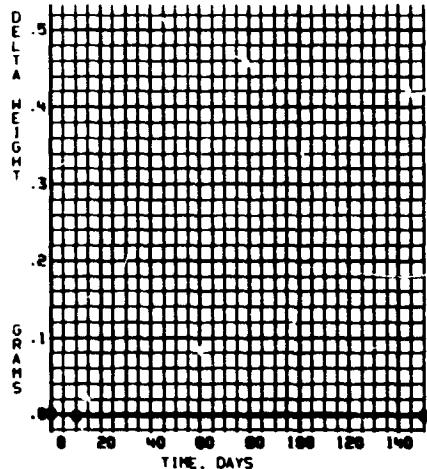
F	DEG R	DEG K	GRAMS
	-	-	.13350+01
	660.	367.	.13320+01
	-	-	.13487+01
	530.	294.	.13462+01
	-	-	.13520+01
	140.	78.	.13485+01
	-	-	.13510+01
	37.	21.	.13515+01

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
	.0	.13475+01
	24.0	.13435+01
	.0	.13489+01
	72.0	.13450+01
	.0	.13415+01
	240.0	.13390+01

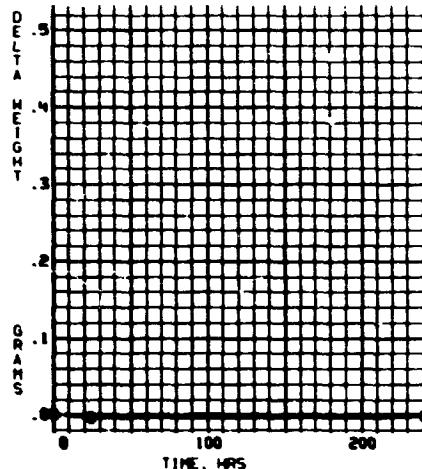
NOTE. •SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 •ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 2 PERCENT
 •THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 •THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- TISSUGLAS, 60G

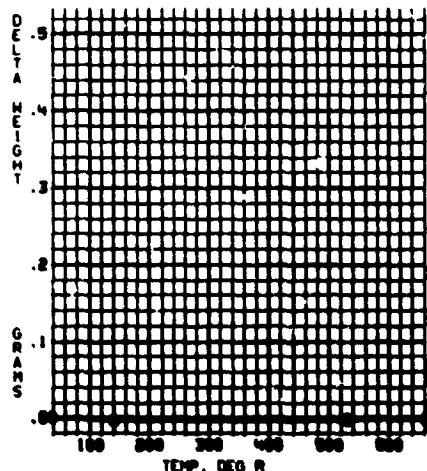


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

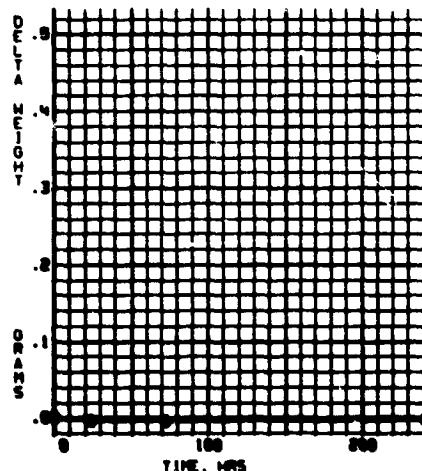
PROPERTY- DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -TISSUGLAS, 60G
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.13424+01
	12.0	.13420+01
	.0	.13505+01
	24.0	.13500+01
	.0	.13397+01
	72.0	.13405+01

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.13372+01
	12.0	.15230+01
	.0	.13283+01
	24.0	.15810+01
	.0	.13441+01
	72.0	.18770+01

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

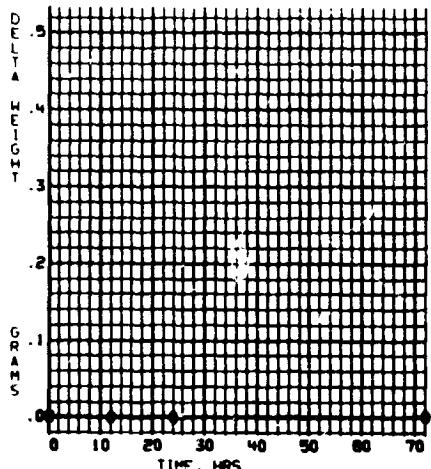
F	HOURS	GRAMS
	.0	.13521+01
	.5 SAMPLE DESTROYED	
	.0	.13525+01
	2.0 SAMPLE DESTROYED	
	.0	.13415+01
	24.0 SAMPLE DESTROYED	

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.13335+01
	4.2	.13325+01
	.0	.13386+01
	150.0	.13400+01

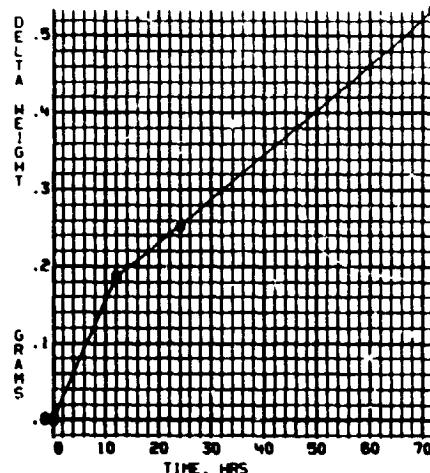
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- TISSUGLAS, 60G

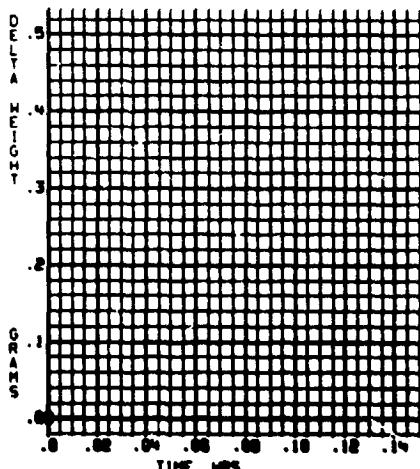


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

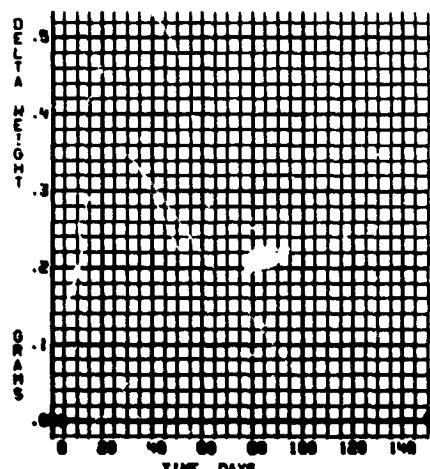
PROPERTY- DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - TISSUGLAS, 60G
PROPERTY - WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C) .4 HR

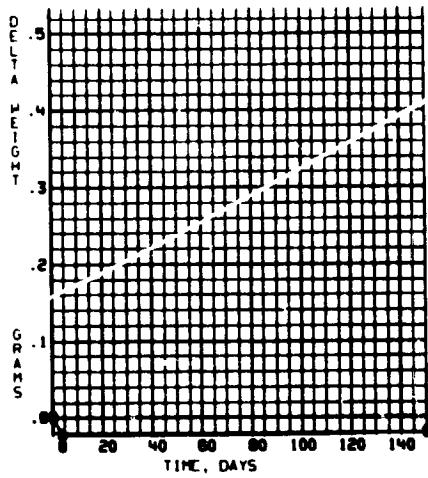
F	DAYS	GRAMS	F	F	P.P.	TORR	GRAMS
I	.0	.13508+01	I	.000			.13436+01
	4.2	.13270+01			.100-02		.13390+01
I	.0	.13431+01	I	.000			.13434+01
	150.0	.13240+01			.760+03	SAMPLE DESTROYED	

NOTE.

- .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
- .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 2 PERCENT
- .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
- .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - TISSUGLAS, 60G

PROPERTY - DELTA HEIGHT



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - TISSUGLAS, 60G
 PROPERTY - LAYER DENSITY
 (FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
 INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	UAYS	NO/IN	NO/CM
	.0	.278+03	.109+03
	10.0	.303+03	.119+03
	150.0	.274+03	.108+03

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	NO/IN	NO/CM
	24.0	.303+03	.119+03
	240.0	.303+03	.119+03

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

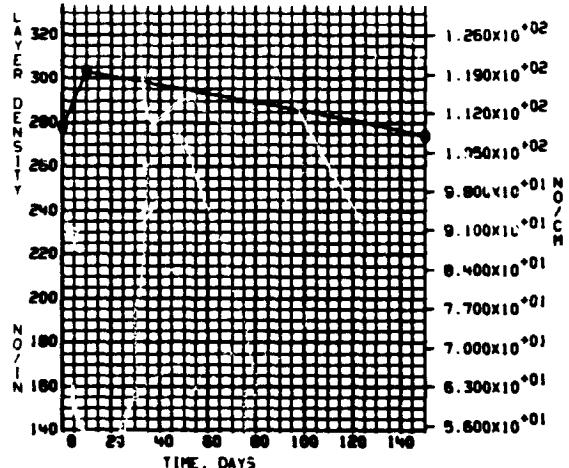
F	DEG R	DEG K	NO/IN	NO/CM
660.	367.		.303+03	.119+03
530.	294.		.208+03	.821+02
37.	21.		.333+03	.131+03

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	NO/IN	NO/CM
	24.0	.333+03	.131+03
	72.0	.278+03	.109+03
	240.0	.328+03	.129+03

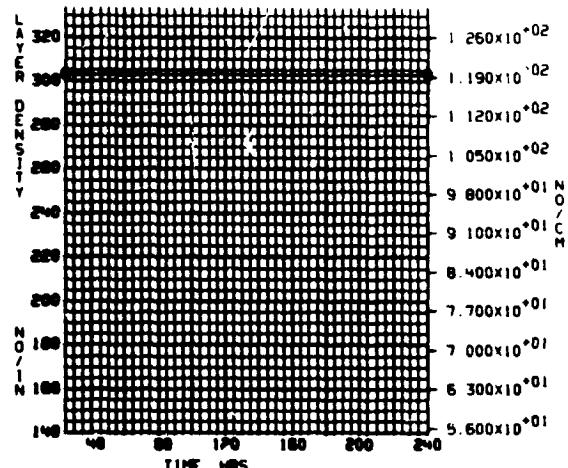
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC, IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- TISSUGLAS, GOG

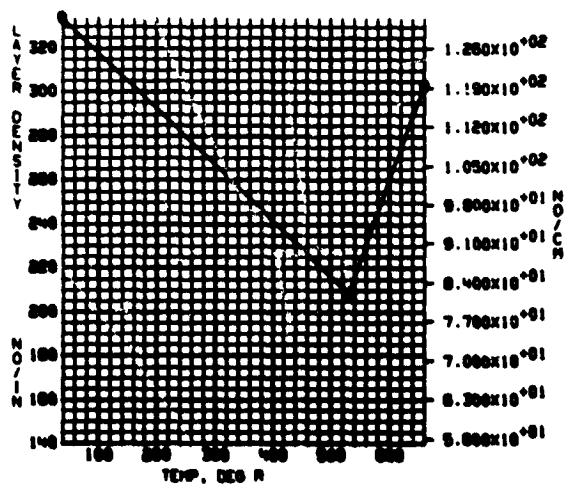


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

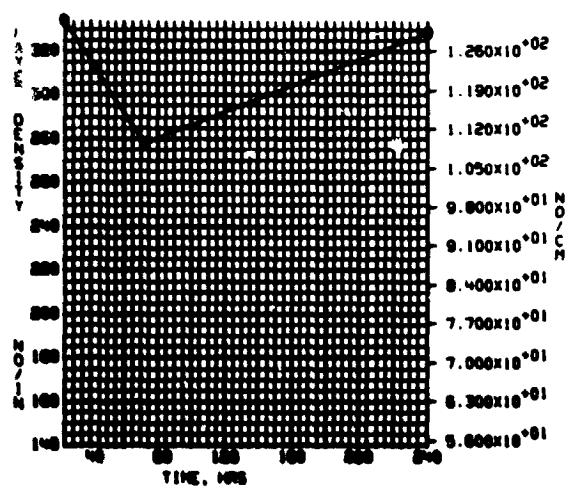
PROPERTY- LAYER DENSITY



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.W.

MATERIAL - TISSUGLAS, 60G
PROPERTY - LAYER DENSITY

(FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	NO/IN	NO/CM	F	HOURS	NO/IN	NO/CM
	12.0	.278+03	.109+03		12.0	.185+03	.730+02
	24.0	.278+03	.109+03		24.0	.235+03	.927+02
	72.0	.303+03	.119+03		72.0	.139+03	.547+02

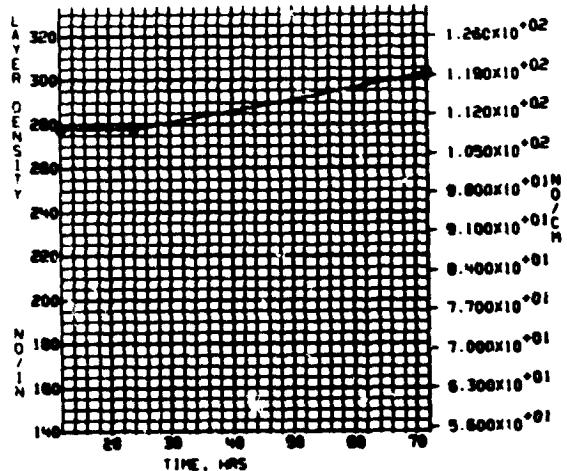
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	NO/IN	NO/CM	F	DAYS	NO/IN	NO/CM
	.5	SAMPLE DESTROYED			4.2	.278+03	.109+03
	2.0	SAMPLE DESTROYED			150.0	.278+03	.109+03
	24.0	SAMPLE DESTROYED					

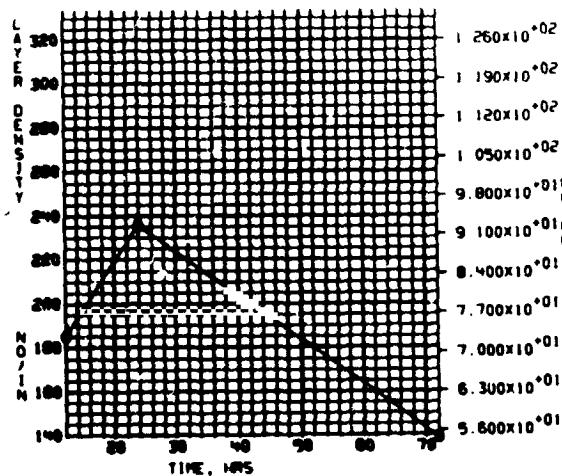
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - TISSUGLAS, 60G

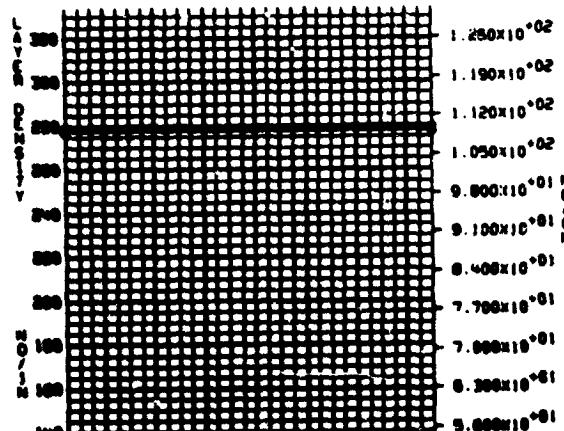


ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

PROPERTY - LAYER DENSITY



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 6(CD)
94.98% RH/95.7% THER.
(21 DEG C) 1.5-03 TEST

MATERIAL -TISSUGLAS, 60G
 PROPERTY -LAYER DENSITY
 (FREE STANDING LAYER DENSITY AFTER COMPRESSION TO 1/2
 INITIAL THICKNESS FOR 20 LAYERS)

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F		DAYS	NO/IN	NO/CM
4.2			.222+03	.876+02
150.0			.278+03	.109+03

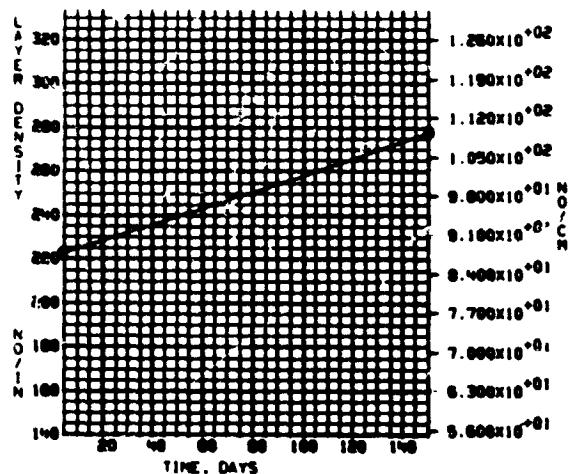
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P.	TORR	NO/IN	NO/CM
			.100-02	.299+03	.118+03
			.760+03		SAMPLE DESTROYED

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 8 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - TISSULAS, 800

PROPERTY - LAYER DENSITY



(ENVIRONMENT: 80°F)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - TISSUGLAS, 60G
PROPERTY - TENSILE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	LB/IN	N/M
.0		.533+00	.934+02
.0		.173+00	.304+02
10.0		.200+00	.350+02
10.0		.227+00	.397+02
150.0		.235+00	.411+02
150.0		.249+00	.437+02

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.293+00	.514+02
	24.0	.173+00	.304+02
	240.0	.117+00	.206+02
	240.0	.117+00	.206+02

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

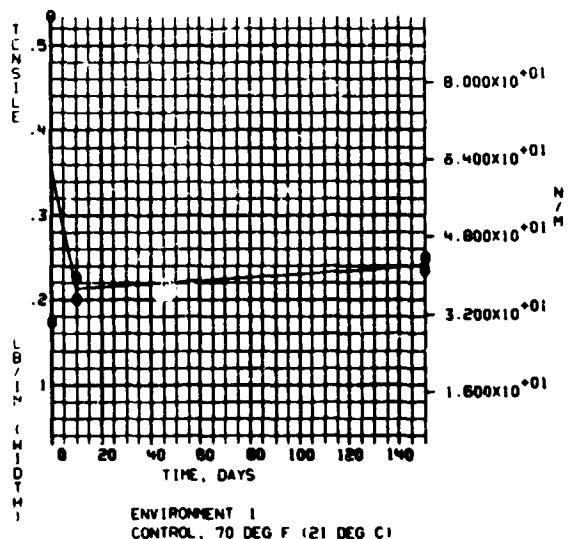
F	DEG R	DEG K	LB/IN	N/M
660.	367.		.117+00	.206+02
660.	367.		.117+00	.206+02
530.	294.		.323+00	.565+02
530.	294.		.176+00	.308+02
140.	78.		.587-01	.103+02
140.	78.		.235+00	.411+02
37.	21.		.352+00	.617+02
37.	21.		.264+00	.463+02

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

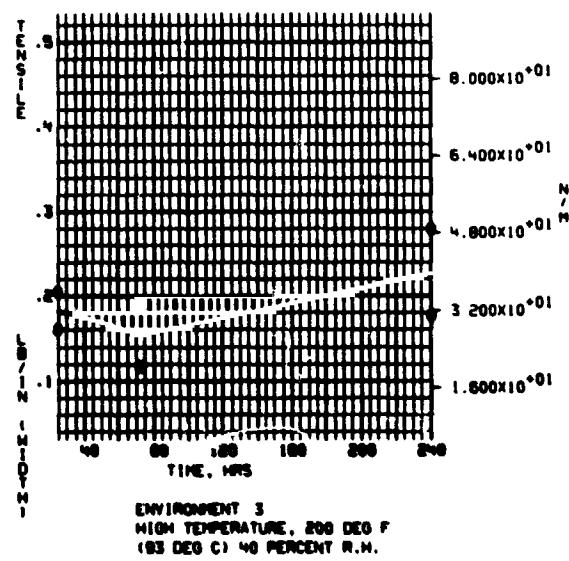
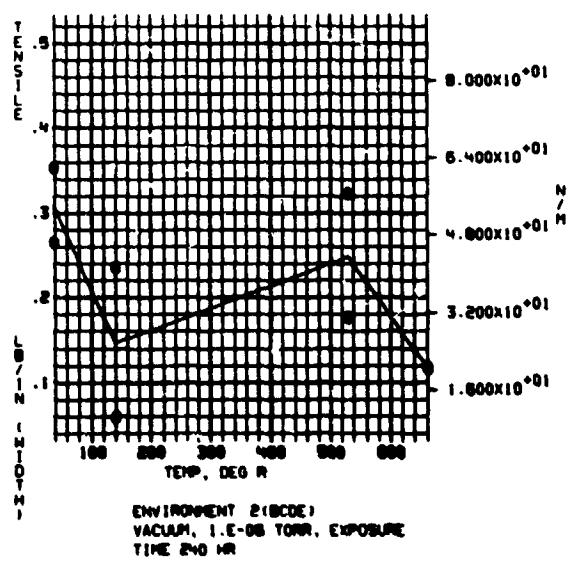
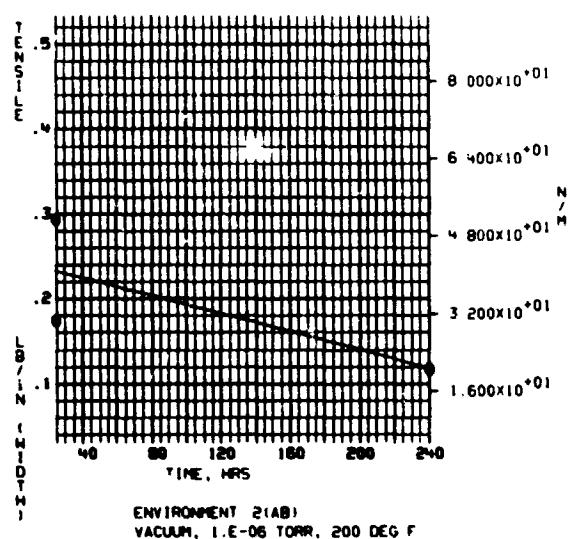
F	HOURS	LB/IN	N/M
	24.0	.205+00	.360+02
	24.0	.161+00	.283+02
	72.0	.191+00	.334+02
	72.0	.117+00	.206+02
	240.0	.279+00	.488+02
	240.0	.176+00	.308+02

NOTE.
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- TISSUGLAS, 60G



PROPERTY- TENSILE



MATERIAL - (ISSUGLAS, 60G
PROPERTY - TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.293+00	.514+02
	12.0	.293+00	.514+02
	24.0	.117+00	.206+02
	24.0	.117+00	.206+02
	72.0	.205+00	.360+02
	72.0	.205+00	.360+02

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.103+00	.180+02
	12.0	.880-01	.154+02
	24.0	.132+00	.231+02
	24.0	.880-01	.154+02
	72.0	.733-01	.128+02
	72.0	.293-01	.514+01

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

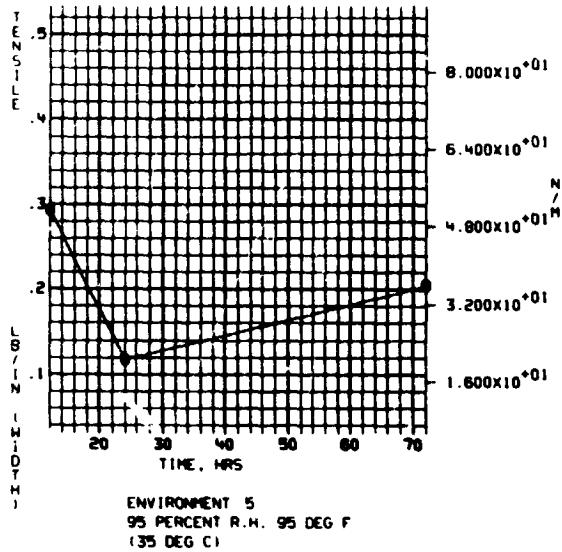
F	HOURS	LB/IN	N/M
	.5	SAMPLE DESTROYED	
	.5	SAMPLE DESTROYED	
	2.0	SAMPLE DESTROYED	
	2.0	SAMPLE DESTROYED	
	24.0	SAMPLE DESTROYED	
	24.0	SAMPLE DESTROYED	

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

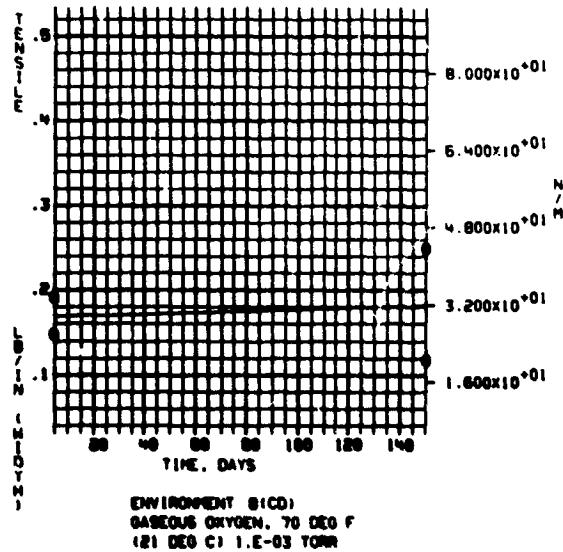
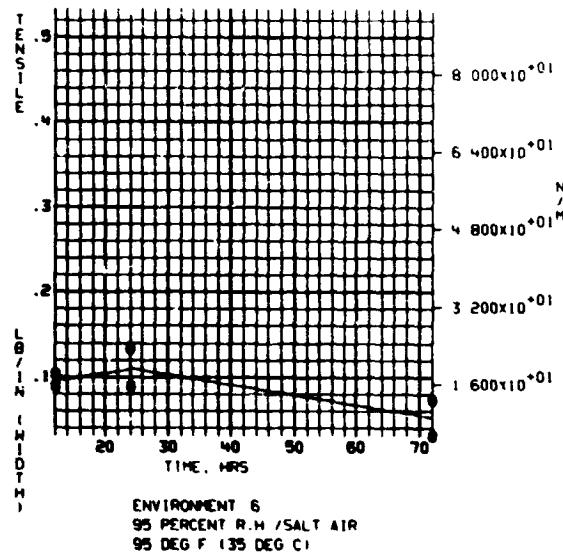
F	DAYS	LB/IN	N/M
	4.2	.191+00	.334+02
	4.2	.147-00	.257+02
	150.0	.249-10	.437+02
	150.0	.117+00	.206+02

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - TISSUGLAS, 60G



PROPERTY - TENSILE



MATERIAL -TISSUGLAS, 60G
PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

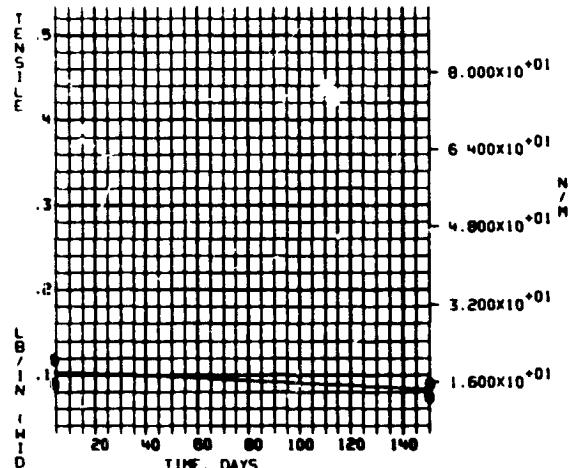
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	U.DAYS	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
	4.2	.880-01	.154+02			.100-02		.337+00	.1,1+02
	4.2	.117+00	.206+02			.100-02		.323+00	.565+02
	150.0	.733-01	.128+02			.760+03		SAMPLE DESTROYED	
	150.0	.880-01	.154+02			.760+03		SAMPLE DESTROYED	

NOT. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL- TISSUGLAS, 60G

PROPERTY- TENSILE



ENVIRONMENT 8(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - TISSUGLAS, 60G

ENVIRONMENT 2B

VACUUM - 10E-06 TORR, 660 DEG.R (365 DEG.K)

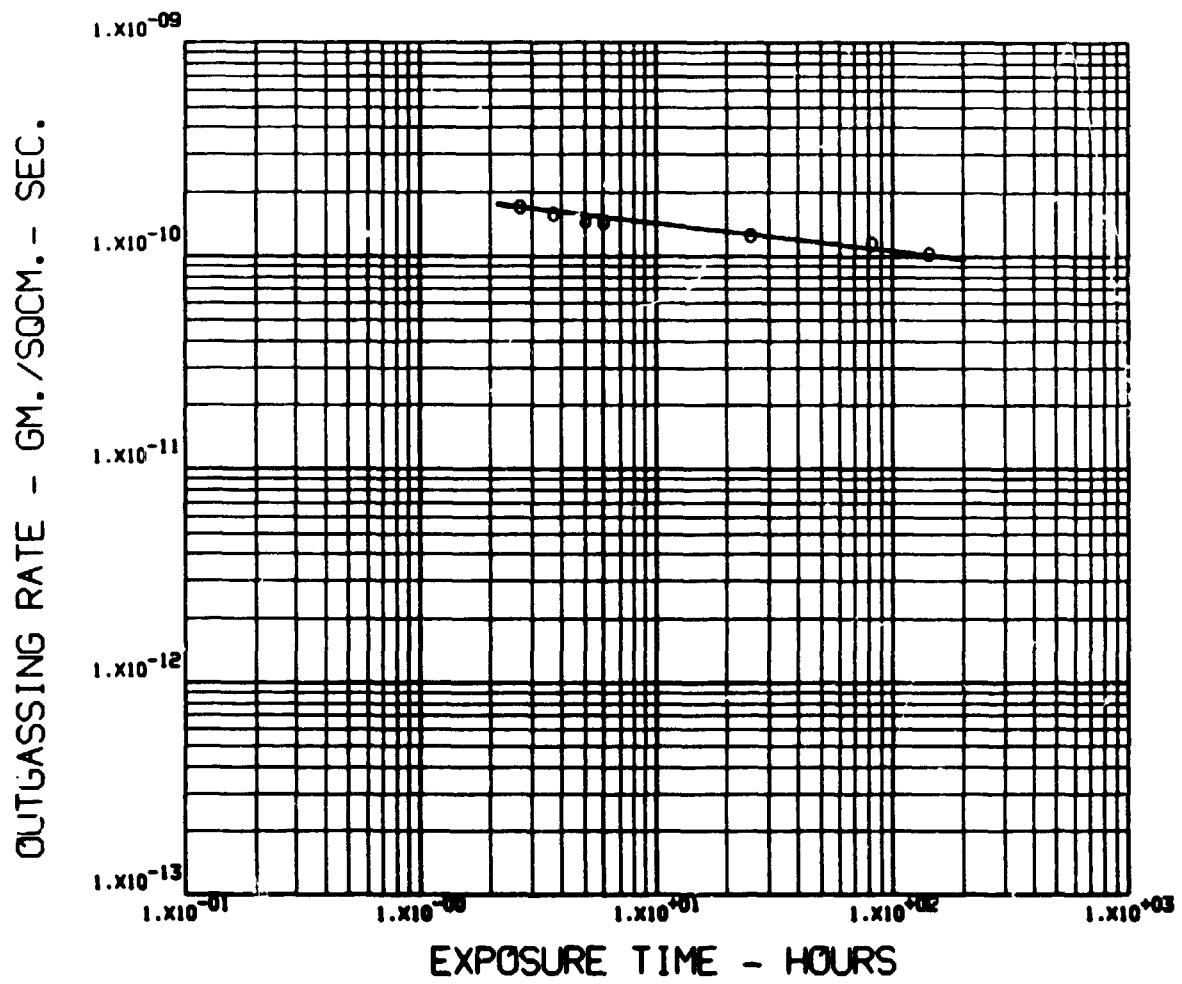
TEST DATE 040271

TEST CHAMBER NO. 4

SAMPLE WEIGHT = .0920 GMS. SAMPLE AREA = 439. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.66	1.67-10	.01	.02	.97
3.66	1.55-10	.01	.02	.98
5.00	1.45-10	.01	.02	.97
5.98	1.43-10	.01	.02	.98
25.00	1.24-10	.01	.02	.97
82.18	1.13-10	.00	.00	.99
142.50	1.02-10	.00	.01	.98

PROPERTY- OUTGASSING
MATERIAL- TISSUGLAS. 60G



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - TISSUGLAS. 60G

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

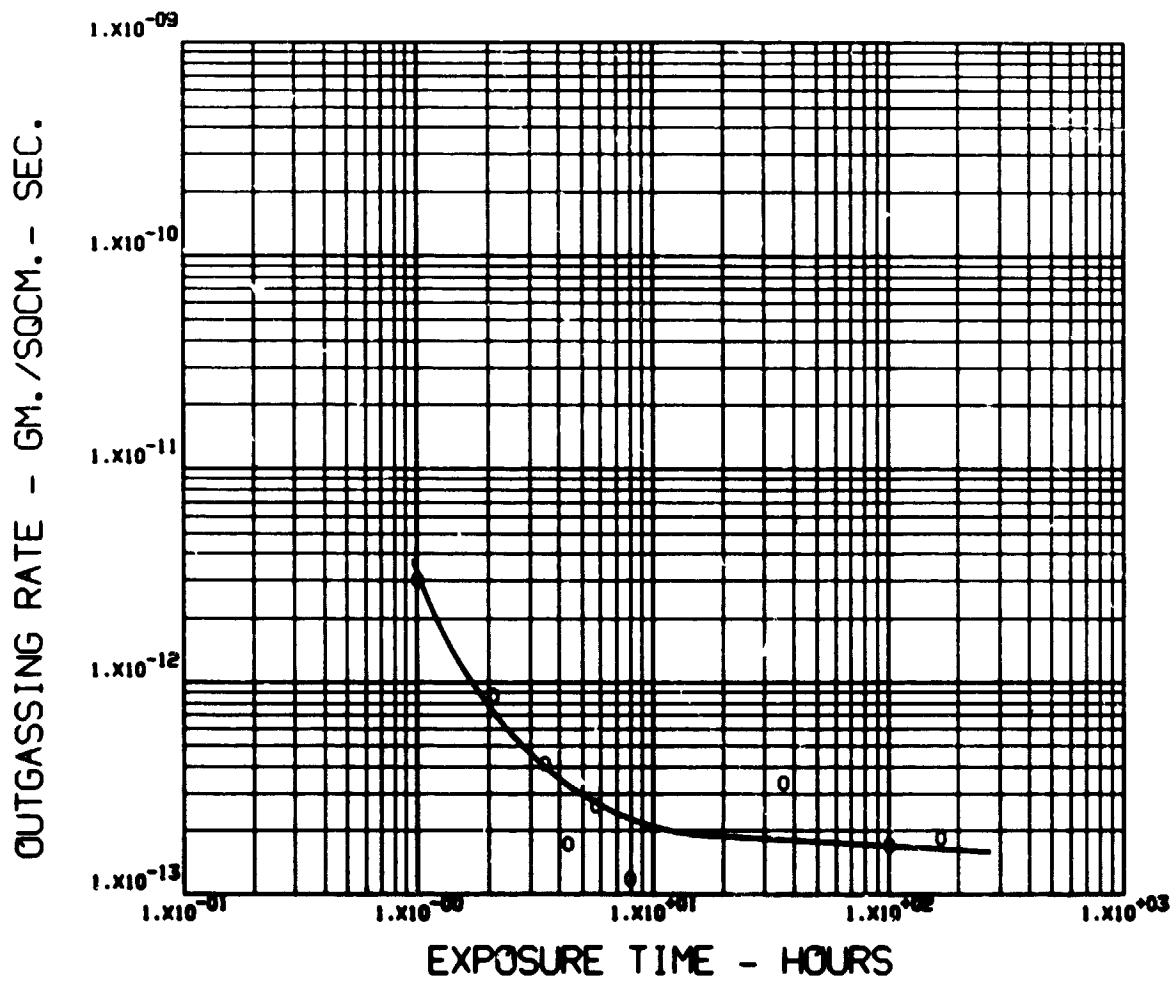
TEST DATE 021071

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .0945 GMS. SAMPLE AREA = 451. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.00	3.01-13	.78	.20	.02
2.09	8.57-13	.74	.23	.03
3.42	4.13-13	.69	.28	.03
4.34	1.72-13	.70	.28	.03
5.67	2.60-13	.67	.33	.00
7.95	1.17-13	.63	.34	.04
75.67	3.31-13	.63	.35	.03
100.84	1.69-13	.54	.40	.06
167.67	1.84-13	.56	.40	.04

PROPERTY- OUTGASSING
MATERIAL- TISSUGLAS. 60G



ENVIRONMENT 2C VACUUM. 10-6 TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = TISSUGLAS. 60G

ENVIRONMENT 4A

VACUUM, 1UE-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

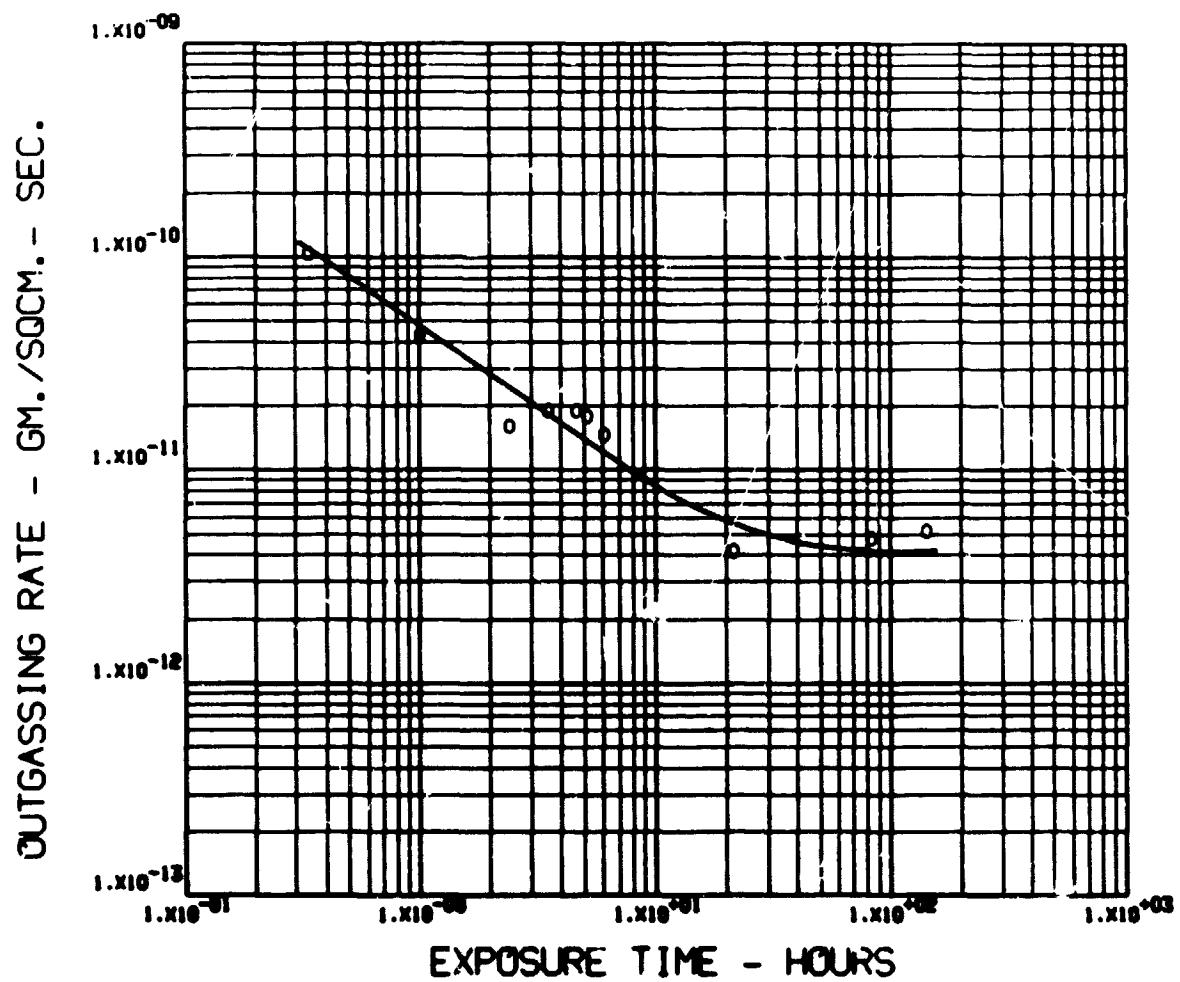
TEST DATE 053172

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .1675 GMS. SAMPLE AREA = 797. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.34	1.03-10	.56	.08	.35
1.00	4.24-11	.00	.09	.91
2.42	1.59-11	.78	.10	.12
3.50	1.90-11	.51	.09	.39
4.59	1.90-11	.51	.10	.38
5.17	1.78-11	.71	.14	.15
6.09	1.45-11	.77	.15	.09
21.25	4.14-12	.72	.13	.15
82.94	4.74-12	.68	.13	.20
142.67	5.17-12	.75	.01	.23

PROPERTY - OUTGASSING
MATERIAL - TISSUGLAS. 60G



ENVIRONMENT 4A VACUUM, 10^{-6} TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY ~ OUTGASSING BEHAVIOR

MATERIAL = TISSUGLAS, 60G

ENVIRONMENT 4H

VACUUM, 10⁻⁶ TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS. FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

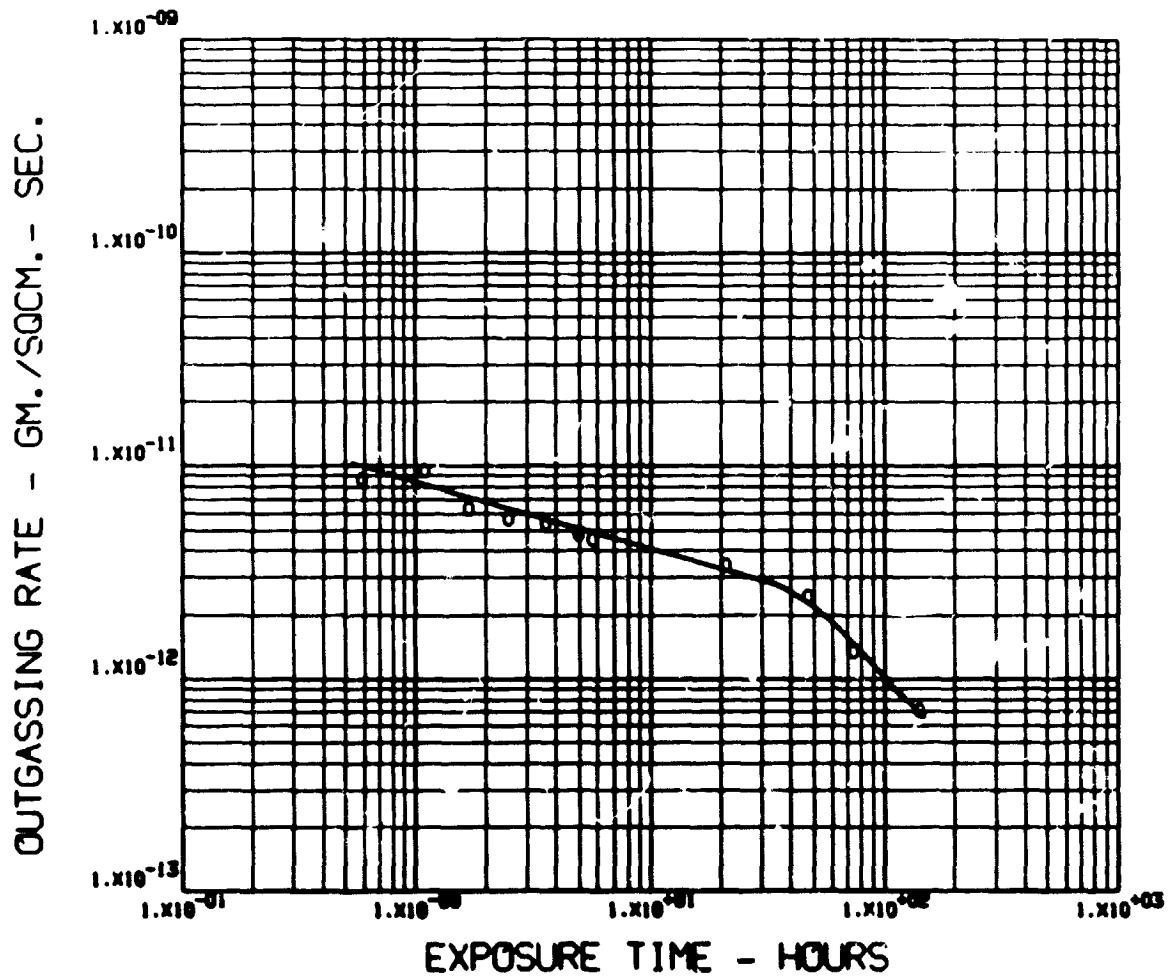
TEST DATE 092771

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .1635 GMS. SAMPLE AREA = 779. 50.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.54	8.61-12	.21	.42	.38
1.00	9.45-12	.26	.31	.43
1.67	6.30-12	.13	.50	.38
2.44	5.66-12	.14	.42	.44
3.50	5.34-12	.08	.34	.58
4.92	4.79-12	.08	.37	.55
5.67	4.46-12	.08	.33	.59
20.67	3.38-12	.18	.55	.27
47.09	2.42-12	.07	.43	.50
73.92	1.33-12	.17	.37	.46
141.17	6.99-13	.19	.34	.47

PROPERTY- OUTGASSING
MATERIAL- TISSUGLAS .60G



ENVIRONMENT 4B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR R. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -BETA FIBER FABRIC
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.78600+00
I	10.0	.78550+00
I	.0	.78800+00
I	10.0	.78650+00
I	.0	.79250+00
I	150.0	.79200+00
I	.0	.78100+00
I	150.0	.78100+00

ENVIRONMENT 2, (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.64950+00
I	24.0	.64450+00
I	.0	.64850+00
I	24.0	.64550+00
I	.0	.79250+00
I	240.0	.78050+00
I	.0	.79000+00
	240.0	.78900+00

ENVIRONMENT 2, (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

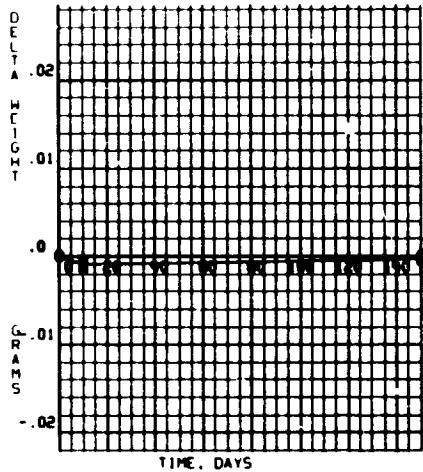
F	DEG R	DEG K	GRAMS
I	-	-	.79250+00
I	660.	367.	.78050+00
I	-	-	.79000+00
I	660.	367.	.78900+00
I	-	-	.77450+00
I	530.	294.	.77320+00
I	-	-	.77800+00
I	530.	294.	.77250+00
I	-	-	.78750+00
I	140.	78.	.78700+00
I	-	-	.78450+00
I	140.	78.	.78450+00
I	-	-	.78000+00
I	37.	21.	.77900+00
I	-	-	.78650+00
I	37.	21.	.78600+00

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.78900+00
I	24.0	.78900+00
I	.0	.78800+00
I	24.0	.78650+00
I	.0	.78850+00
I	72.0	.78500+00
I	.0	.78150+00
I	72.0	.77550+00
I	.0	.76950+00
I	240.0	.77200+00
I	.0	.79000+00
	240.0	.79100+00

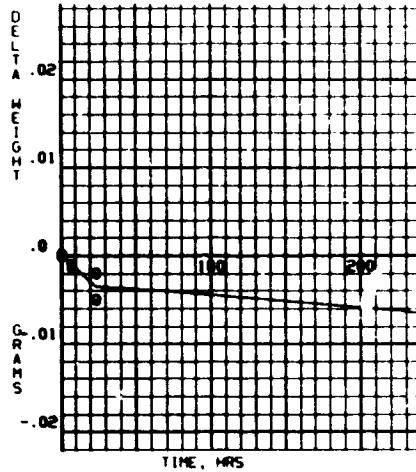
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - BETA FIBER FABRIC

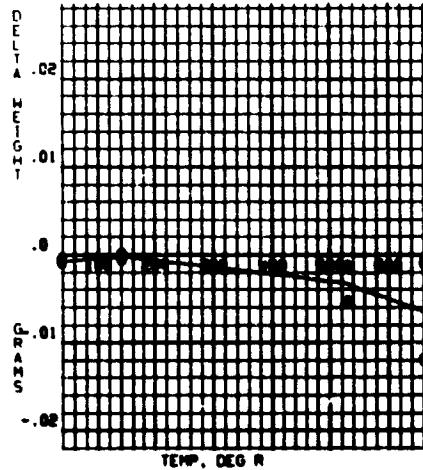


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

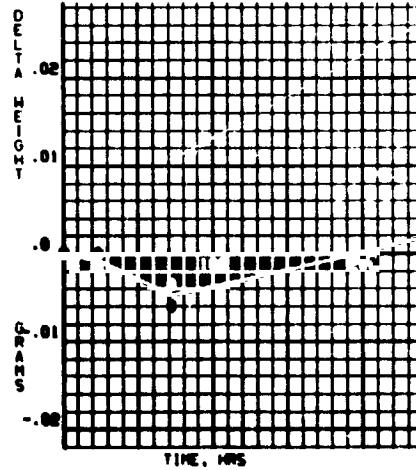
PROPERTY - DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -BETA FIBER FABRIC
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.78000+00
	12.0	.77250+00
	.0	.79150+00
	12.0	.78400+00
	.0	.78300+00
	24.0	.76080+00
	.0	.77900+00
	24.0	.77950+00
	.0	.77950+00
	72.0	.77900+00
	.0	.77150+00
	72.0	.77100+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.77450+00
	12.0	.75350+00
	.0	.78250+00
	12.0	.77150+00
	.0	.78050+00
	24.0	.77050+00
	.0	.77950+00
	24.0	.77550+00
	.0	.77200+00
	72.0	.77400+00
	.0	.77550+00
	72.0	.80400+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

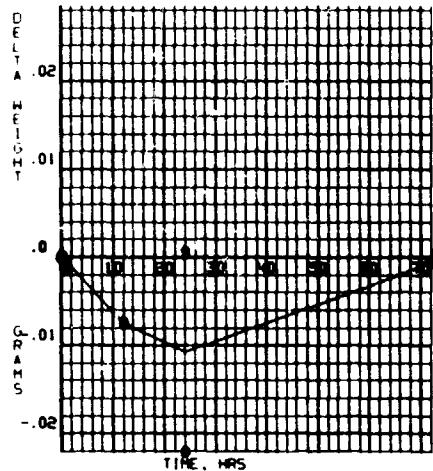
F	HOURS	GRAMS
	.0	.75950+00
	.5	.75900+00
	.0	.76000+00
	.5	.75950+00
	.0	.76250+00
	2.0	.76250+00
	.0	.77300+00
	2.0	.77300+00
	.0	.76750+00
	24.0	.76650+00
	.0	.76150+00
	24.0	.76100+00

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.76450+00
	4.2	.77000+00
	.0	.76950+00
	4.2	.75850+00
	.0	.76150+00
	150.0	.76000+00
	.0	.76050+00
	150.0	.75050+00

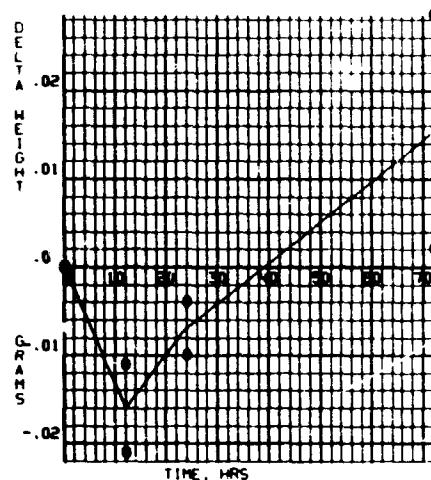
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE F+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - BETA FIBER FABRIC

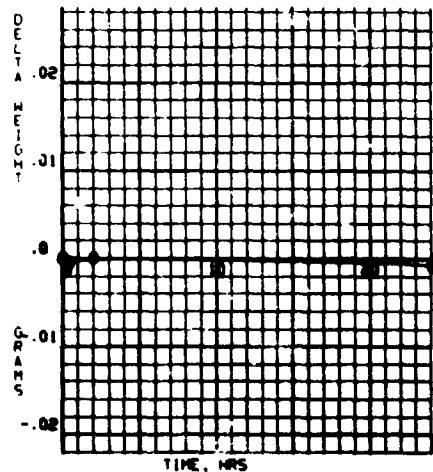


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

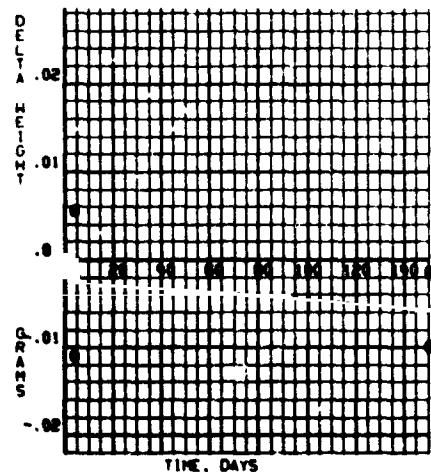
PROPERTY - DELTA WEIGHT



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -HETA FIBER FABRIC
 PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F			DAYS	GRAMS
I			.0	.75350+00
			4.2	.75300+00
I			.0	.75550+00
			4.2	.75500+00
I			.0	.76350+00
			150.0	.76150+00
I			.0	.76950+00
			150.0	.76750+00

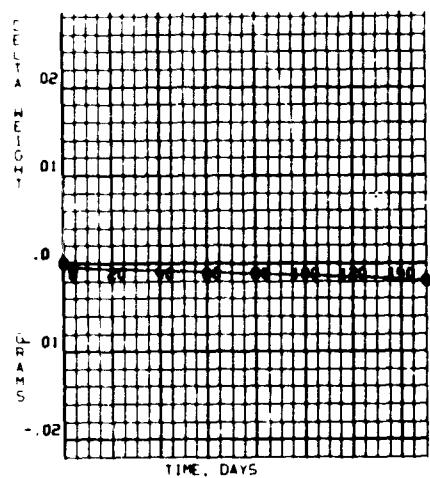
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C)+4 HR

F	F	P.P.	TORR	GRAMS
I			.000	.76600+00
			.100-02	.76700+00
I			.000	.77400+00
			.100-02	.77400+00
I			.000	.78300+00
			.760+03	.78900+00
I			.000	.76850+00
			.760+03	.77900+00

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - BETA FIBER FABRIC

PROPERTY - DELTA WEIGHT



ENVIRONMENT B(IFI)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -BETA FIBER FABRIC
PROPERTY -TENSILE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DEG	LB/IN	N/M
	.0	.109+03	.191+05
	.0	.980+02	.172+05
	10.0	.112+03	.196+05
	10.0	.122+03	.213+05
	150.0	.125+03	.218+05
	150.0	.116+03	.203+05

ENVIRONMENT 2 (AR)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	DEG	HOURS	LB/IN	N/M
		24.0	.980+02	.172+05
		24.0	.117+03	.205+05
		240.0	.131+03	.230+05
		240.0	.123+03	.215+05

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

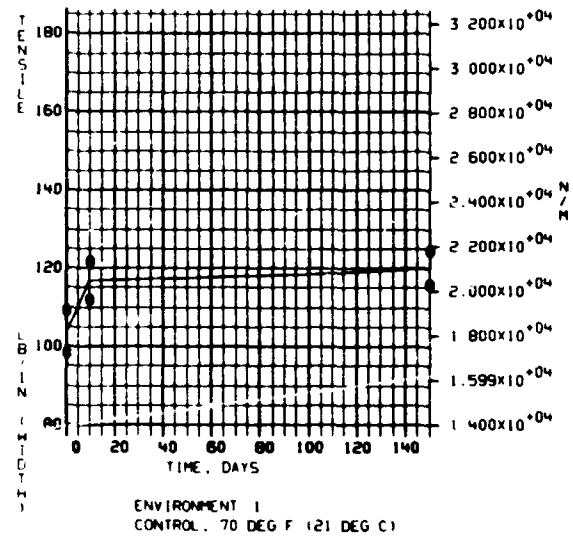
F	DEG	R	DEG	K	LB/IN	N/M
660.	367.	.	131	+03	.230+05	
660.	367.	.	123	+03	.215+05	
530.	294.	.	121	+03	.211+05	
530.	294.	.	124	+03	.218+05	
140.	78.	.	123	+03	.216+05	
140.	78.	.	132	+03	.231+05	
37.	21.	.	132	+03	.232+05	
37.	21.	.	116	+03	.203+05	

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

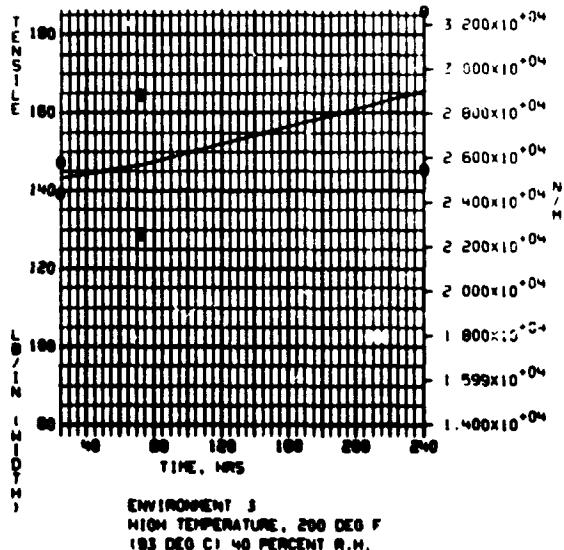
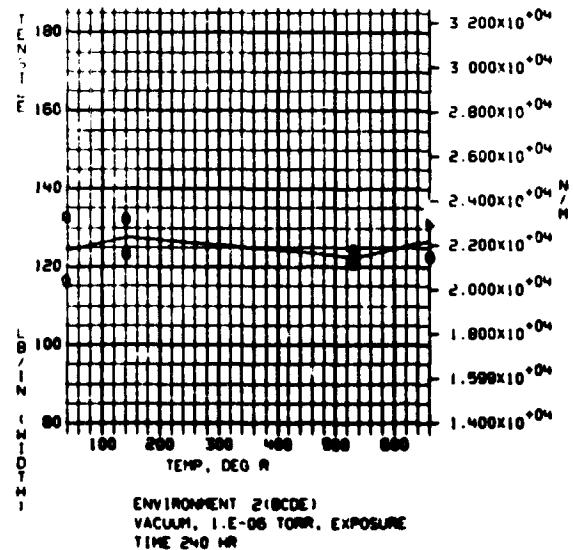
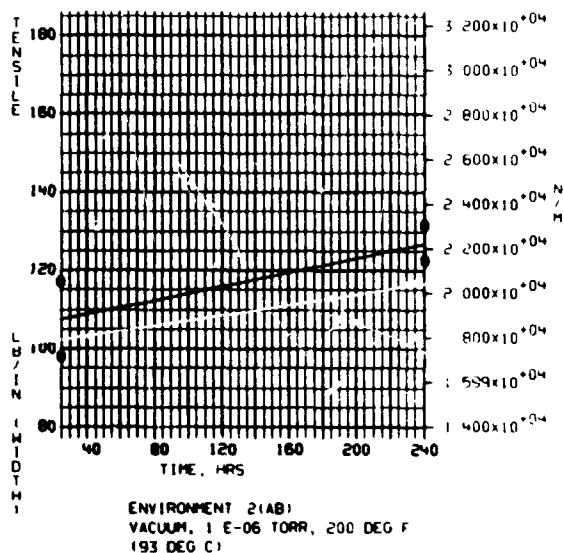
F	DEG	HOURS	LB/IN	N/M
		24.0	.147+03	.258+05
		24.0	.139+03	.244+05
		72.0	.164+03	.288+05
		72.0	.129+03	.226+05
		240.0	.145+03	.255+05
		240.0	.186+03	.326+05

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - BETA FIBER FABRIC



PROPERTY - TENSILE



MATERIAL -BETA FIBER FABRIC
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.995+02	.174+05
	12.0	.112+03	.196+05
	24.0	.134+03	.235+05
	24.0	.118+03	.207+05
	72.0	.111+03	.195+05
	72.0	.138+03	.241+05

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.143+03	.250+05
	12.0	.956+02	.167+05
	24.0	.141+03	.246+05
	24.0	.158+03	.276+05
	72.0	.995+02	.174+05
	72.0	.890+02	.156+05

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

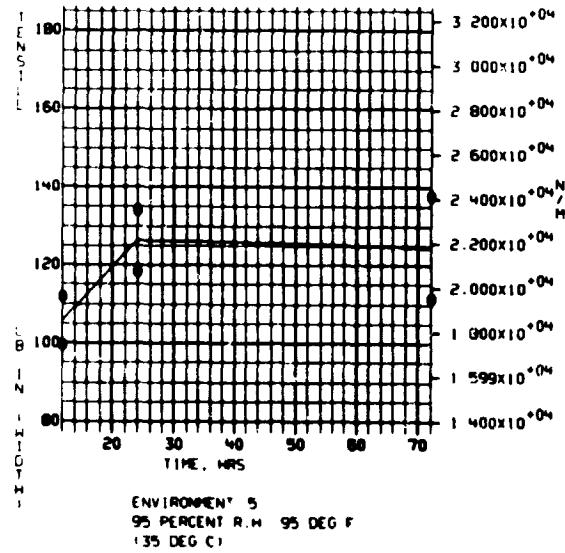
F	HOURS	LB/IN	N/M
	.5	.100+03	.175+05
	.5	.768+02	.135+05
	2.0	.109+03	.191+05
	2.0	.106+03	.186+05
	24.0	.133+03	.233+05
	24.0	.101+03	.177+05

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

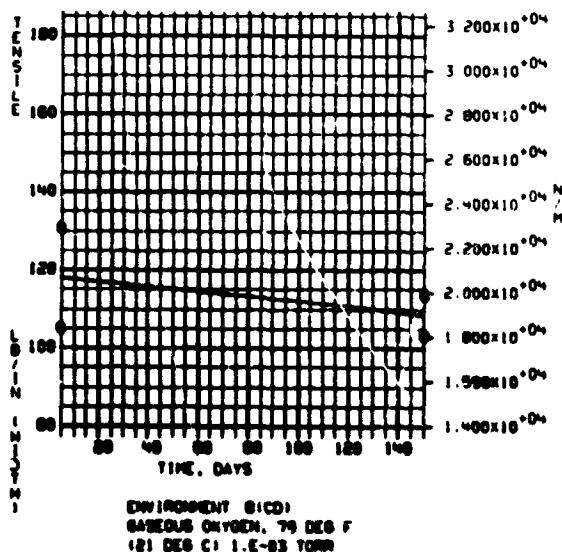
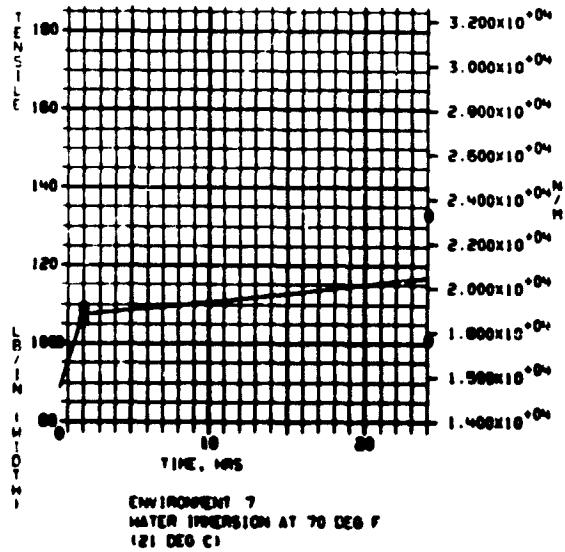
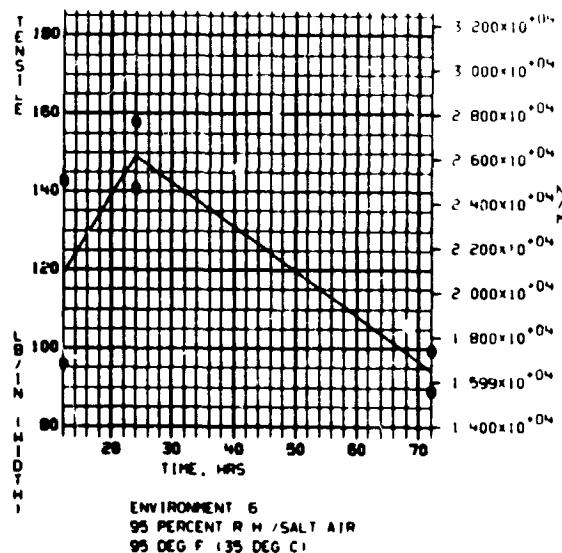
F	DAYs	LB/IN	N/M
	4.2	.105+03	.184+05
	4.2	.131+03	.229+05
	150.0	.114+03	.199+05
	150.0	.103+03	.181+05

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - BETA FIBER FABRIC



PROPERTY - TENSILE



MATERIAL -BETA FIBER FABRIC
PROPERTY -TENSILE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

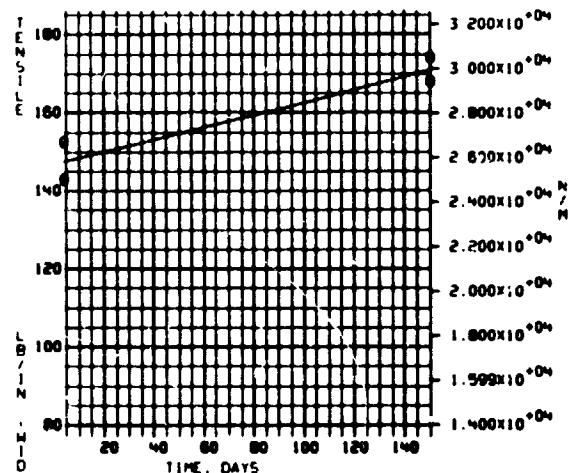
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	DAYS	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
	4.2	.143+03	.250+05			.100-02		.150+03	.263+05
	4.2	.152+03	.267+05			.100-02		.143+03	.251+05
	150.0	.168+03	.294+05			.760+03		.490+02	.859+04
	150.0	.174+03	.305+05			.760+03		.450+02	.788+04

NOTE. •SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 •ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 •THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 •THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - PETE FIBER FABRIC

PROPERTY - TENSILE



ENVIRONMENT - G(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BETA FIBER FABRIC

ENVIRONMENT 2B

VACUUM, 1UE-06 TORR, 660 DFG.R (365 DEG.K)

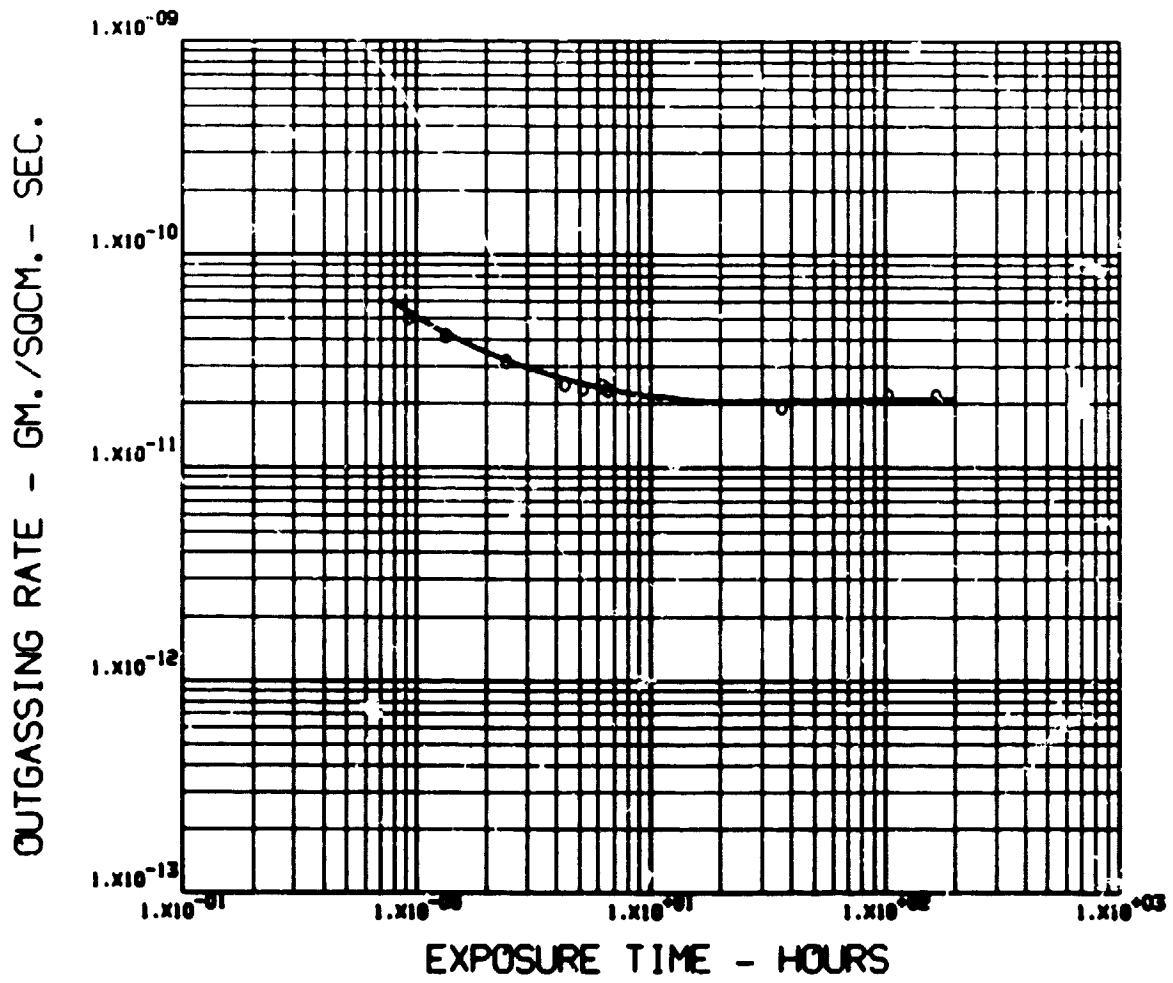
TEST DATE 040671

TEST CHAMBER NO. 2

SAMPLE HEIGHT = 3.8430 GMS. SAMPLE AREA = 387. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.92	5.03-11	.48	.20	.32
1.32	4.09-11	.36	.32	.32
2.40	3.13-11	.64	.17	.19
4.32	2.44-11	.49	.07	.45
5.15	2.34-11	.72	.18	.10
6.20	2.42-11	.51	.23	.26
6.60	2.31-11	.69	.13	.18
36.14	1.91-11	.56	.16	.28
102.82	2.18-11	.73	.08	.19
165.50	2.18-11	.69	.12	.18

PROPERTY - OUTGASSING
MATERIAL - BETA FIBER FABRIC



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BETA FIBER FABRIC

ENVIRONMENT 2C

VACUUM, 1.0E-06 TORR-530 DEG.R (295 DEG.K)

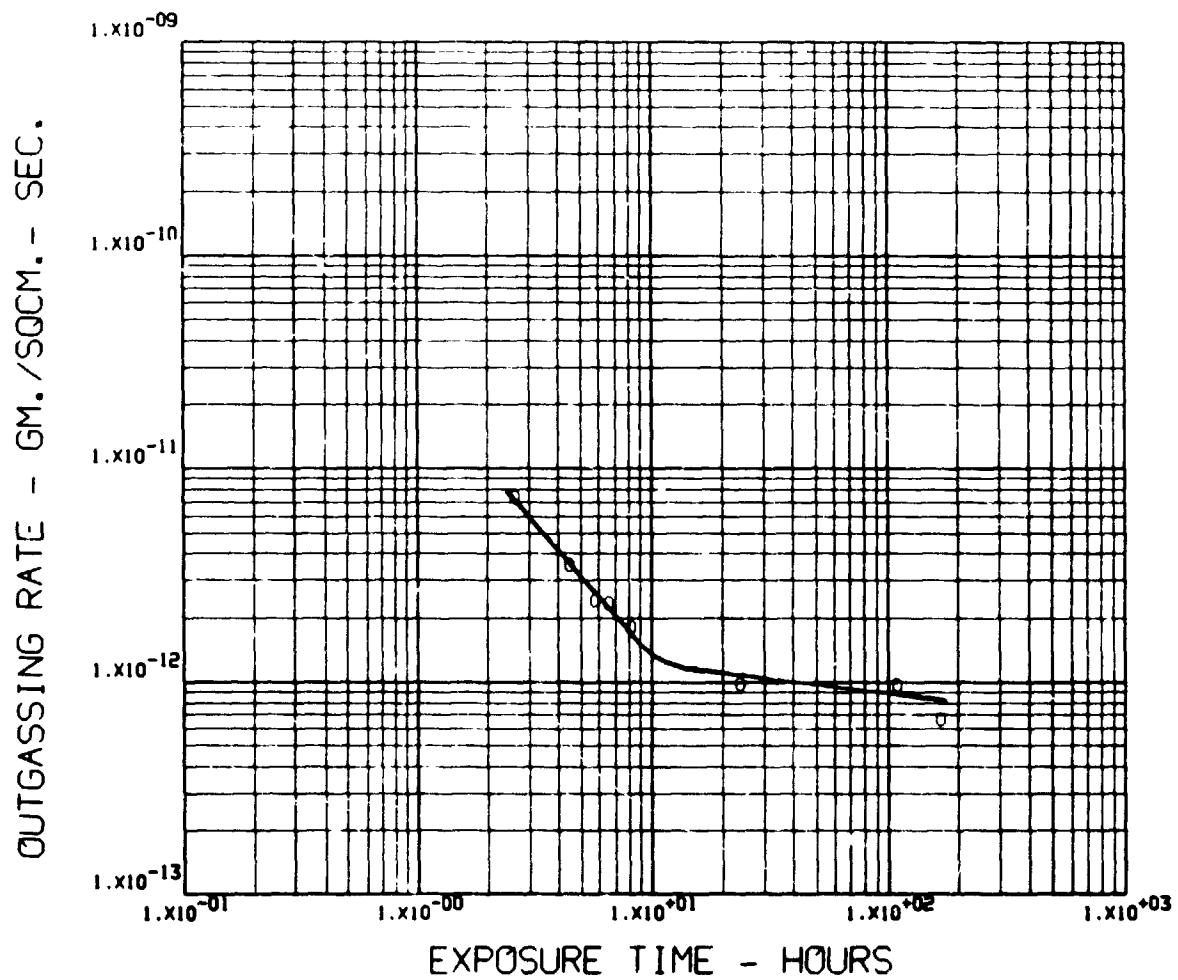
TEST DATE 021171

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 3.8320 GMS. SAMPLE AREA = 386. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SGCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.58	7.29-12	.34	.61	.05
4.41	3.50-12	.38	.59	.03
5.75	2.41-12	.58	.35	.06
6.58	2.32-12	.30	.65	.05
8.16	1.79-12	.10	.84	.06
23.58	9.65-13	.12	.77	.11
108.90	9.51-13	.02	.78	.20
167.58	6.59-13	.00	1.00	.00

PROPERTY - OUTGASSING
MATERIAL - BETA FIBER FABRIC



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BETA FIBER FABRIC

ENVIRONMENT 4A

VACUUM, 1.0E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

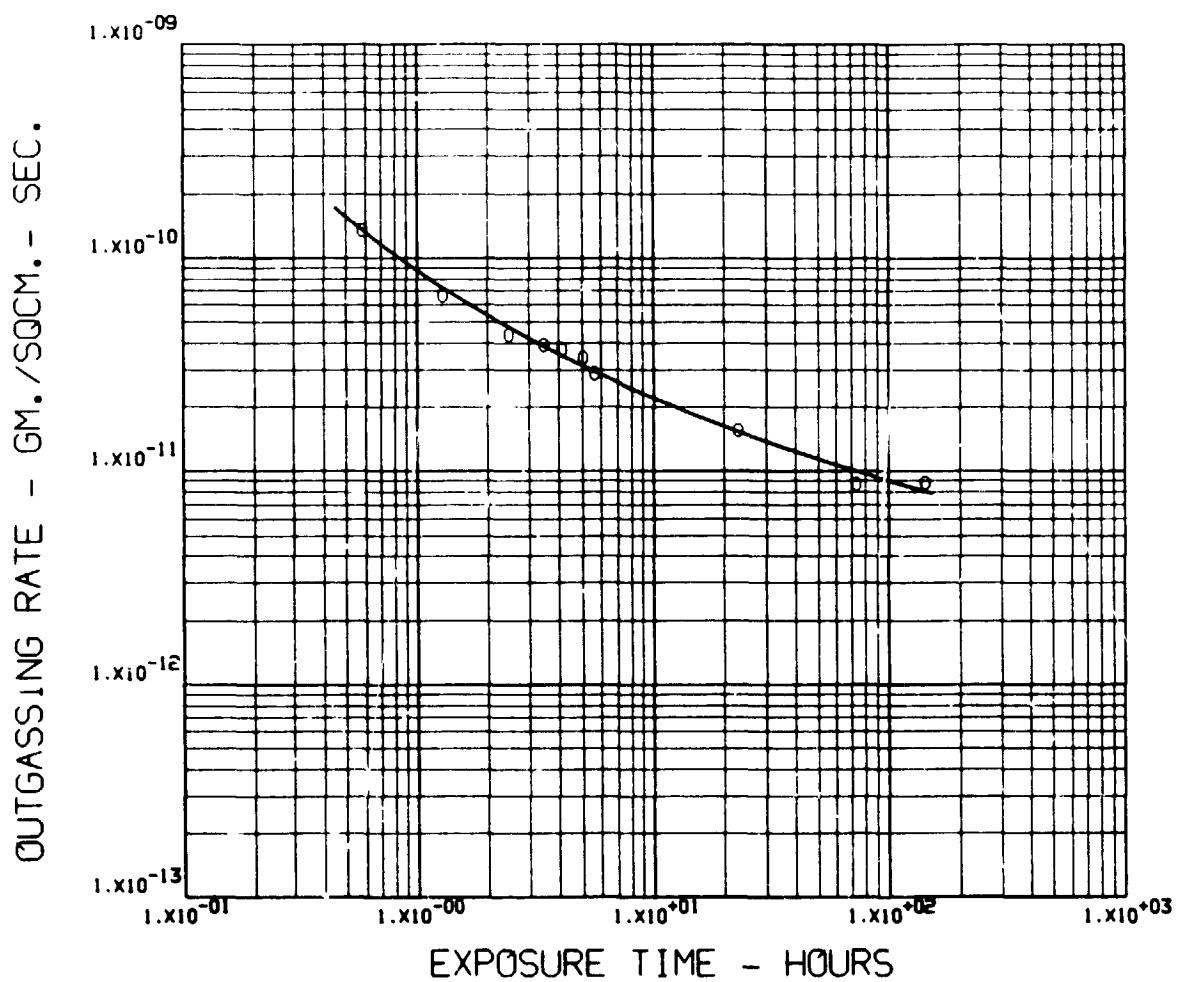
TEST DATE 060672

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 6.3520 GMS. SAMPLE AREA = 641. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.58	1.35-10	.16	.00	.84
1.28	6.65-11	.21	.01	.77
2.45	4.34-11	.26	.08	.66
3.41	3.88-11	.28	.00	.71
4.08	3.68-11	.34	.00	.66
5.00	3.40-11	.33	.00	.67
5.58	2.87-11	.46	.00	.54
22.83	1.54-11	.54	.00	.46
72.08	8.71-12	.66	.00	.33
143.16	8.75-12	.65	.01	.34

PROPERTY - OUTGASSING
MATERIAL - BETA FIBER FABRIC



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = BETA FIBER FABRIC

ENVIRONMENT 4B

VACUUM, 1.0E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

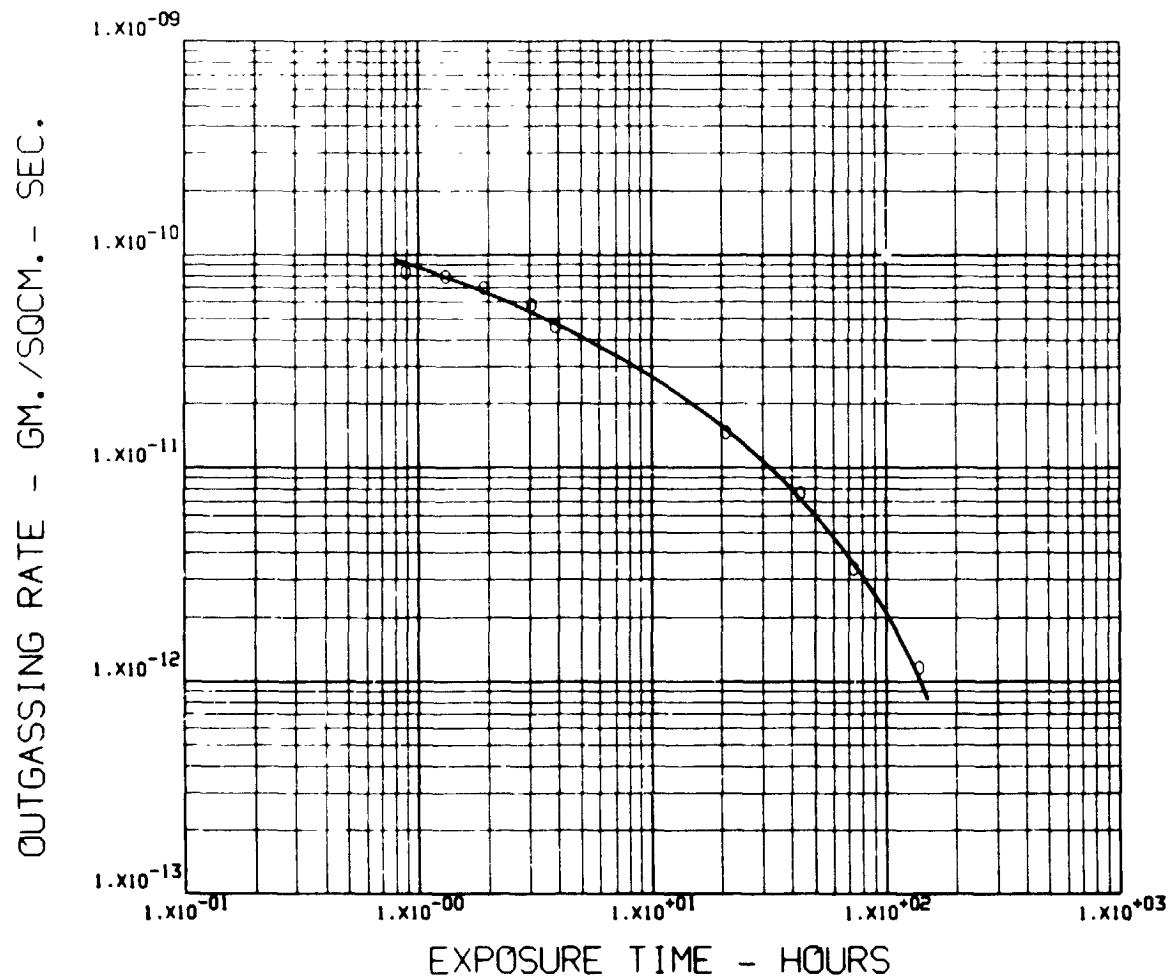
TEST DATE 10/11/71

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 7.5285 GMS. SAMPLE AREA = 759. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.89	8.17-11	.11	.34	.55
1.30	7.81-11	.08	.36	.56
1.89	6.95-11	.07	.35	.58
3.04	5.75-11	.05	.39	.56
3.82	4.59-11	.04	.41	.55
20.40	1.47-11	.04	.37	.58
43.19	7.50-12	.04	.32	.64
72.32	3.35-12	.05	.41	.54
138.42	1.14-12	.05	.88	.07

PROPERTY - OUTGASSING
MATERIAL - BETA FIBER FABRIC



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -NARMCO ADHESIVE, 7343/7139
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.50005+02
I	10.0	.50004+02
I	.0	.50332+02
I	10.0	.50331+02
I	.0	.50114+02
I	150.0	.50114+02
I	.0	.50180+02
I	150.0	.50177+02

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.50008+02
I	24.0	.50006+02
I	.0	.50241+02
I	24.0	.50240+02
I	.0	.50325+02
I	240.0	.50323+02
I	.0	.50506+02
I	240.0	.50506+02

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

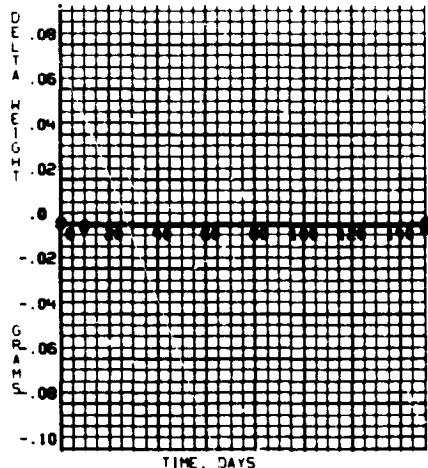
F	DEG R	DEG K	GRAMS
I	-	-	.50325+02
I	660.	367.	.50323+02
I	-	-	.50506+02
I	660.	367.	.50506+02
I	-	-	.50240+02
I	530.	294.	.50240+02
I	-	-	.50295+02
I	530.	294.	.50290+02
I	-	-	.50395+02
I	140.	78.	.50393+02
I	-	-	.50302+02
I	140.	78.	.50303+02
I	-	-	.50410+02
I	37.	21.	.50411+02
I	-	-	.50451+02
I	37.	21.	.50451+02

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.50321+02
I	24.0	.50321+02
I	.0	.50411+02
I	24.0	.50413+02
I	.0	.50200+02
I	72.0	.50201+02
I	.0	.50266+02
I	72.0	.50266+02
I	.0	.49846+02
I	240.0	.49847+02
I	.0	.50365+02
I	240.0	.50365+02

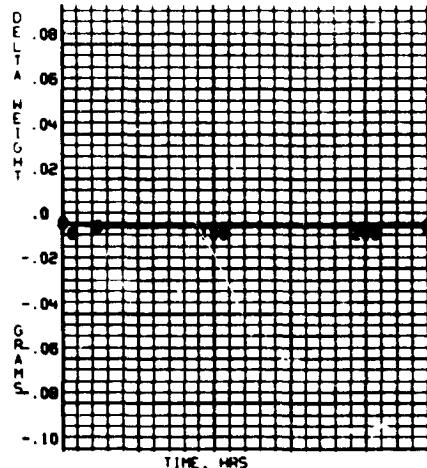
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- NARMCO ADHESIVE, 7343/7139

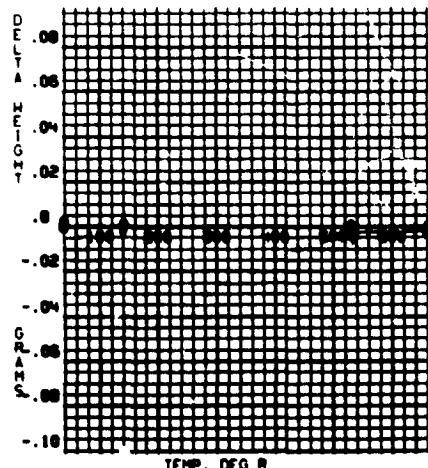


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

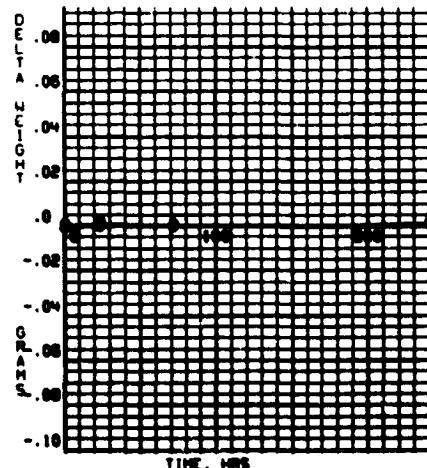
PROPERTY- DELTA HEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -NARMCO ADHESIVE, 7343/7139
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.50383+02
	12.0	.50382+02
	.0	.50468+02
	12.0	.50468+02
	.0	.50372+02
	24.0	.50372+02
	.0	.50264+02
	24.0	.50266+02
	.0	.50299+02
	72.0	.50300+02
	.0	.50312+02
	72.0	.50314+02

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.50218+02
	12.0	.50315+02
	.0	.50550+02
	12.0	.50639+02
	.0	.50248+02
	24.0	.50148+02
	.0	.50357+02
	24.0	.50302+02
	.0	.50398+02
	72.0	.50441+02
	.0	.50245+02
	72.0	.50311+02

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

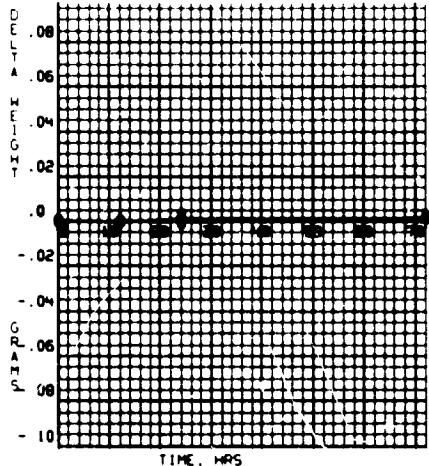
F	HOURS	GRAMS
	.0	.50228+02
	.5	.50233+02
	.0	.50146+02
	.5	.50148+02
	.0	.50126+02
	2.0	.50130+02
	.0	.50510+02
	2.0	.50510+02
	.0	.50319+02
	24.0	.50318+02
	.0	.50188+02
	24.0	.50187+02

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.50268+02
	4.2	.50271+02
	.0	.50355+02
	4.2	.50355+02
	.0	.49736+02
	150.0	.49734+02
	.0	.50150+02
	150.0	.50150+02

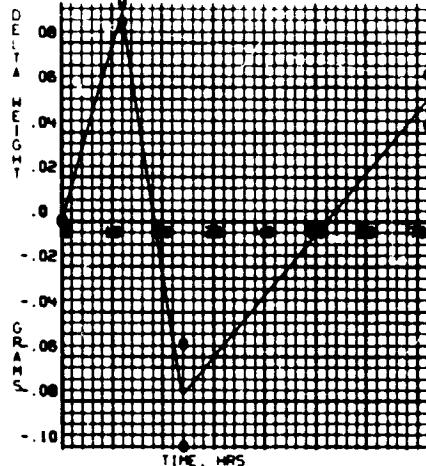
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - NARMCO ADHESIVE 7347 7139

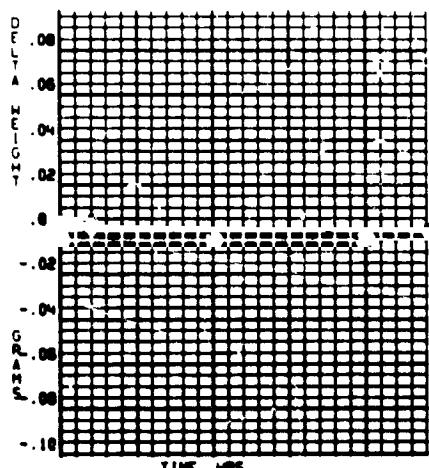


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

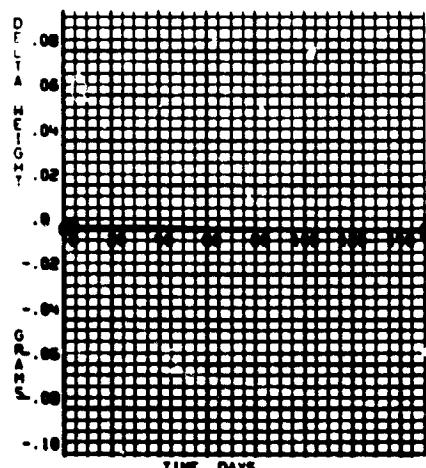
PROPERTY - DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -NARMCO ADHESIVE, 7343/7139
 PROPERTY -WEIGHT

ENVIRONMENT B (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	U.DAYS	GRAMS
I	.0	.50200+02
	4.2	.50200+02
I	.0	.50180+02
	4.2	.50180+02
I	.0	.50406+02
	150.0	.50408+02
I	.0	.50253+02
	150.0	.50254+02

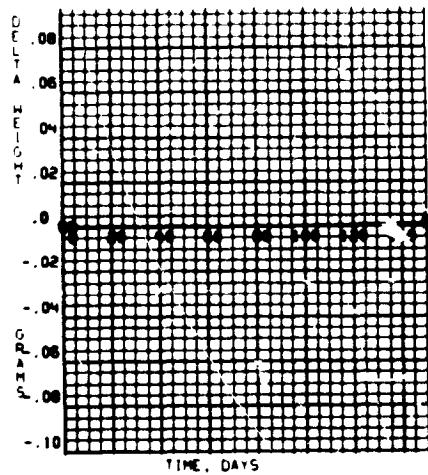
ENVIRONMENT B (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P.	TORR	GRAMS
I		.000		.50192+02
		.100-02		.50193+02
I		.000		.50315+02
		.100-02		.50315+02
I		.000		.50351+02
		.760+03	SAMPLE DESTROYED	
I		.000		.50233+02
		.760+03	SAMPLE DESTROYED	

NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: NARMCO ADHESIVE, 7343/7139

PROPERTY: DELTA HEIGHT



ENVIRONMENT: BIEF
GASEOUS FLUORINE, 70 DEG F
1.21 DEG C, 1 E-03 TORR

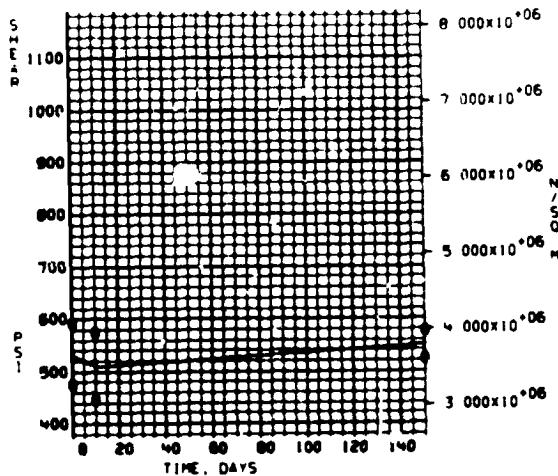
MATERIAL -NARCO ADHESIVE, 7343/7139
 PROPERTY -SHEAR

ENVIRONMENT 1			ENVIRONMENT 2 (AB)		
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DEG DAYS	PSI	N/SQ M	F	HOURS
.0		.590+03	.407+07		
.0		.474+03	.327+07	24.0	
10.0		.573+03	.395+07	24.0	
10.0		.444+03	.306+07	240.0	
150.0		.523+03	.361+07	240.0	
150.0		.575+03	.397+07		

ENVIRONMENT 2 (BCDE)				ENVIRONMENT 3				
VACUUM, 1.E-06 TORR, EXPOSURE TIME 240 HR				HIGH TEMPERATURE, 200 DEG F (93 DEG C) 40 PERCENT R.H.				
F	DEG R	DEG K	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
660.	367.		.119+04	.820+07	24.0		.698+03	.481+07
660.	367.		.831+03	.573+07	24.0		.707+03	.488+07
530.	294.		.715+03	.493+07	72.0		.791+03	.545+07
530.	294.		.650+03	.448+07	72.0		.822+03	.567+07
140.	78.		.533+03	.368+07	240.0		.109+04	.132+07
140.	78.		.532+03	.367+07	240.0		.968+03	.667+07
37.	21.		.684+03	.472+07				
37.	21.		.564+03	.389+07				

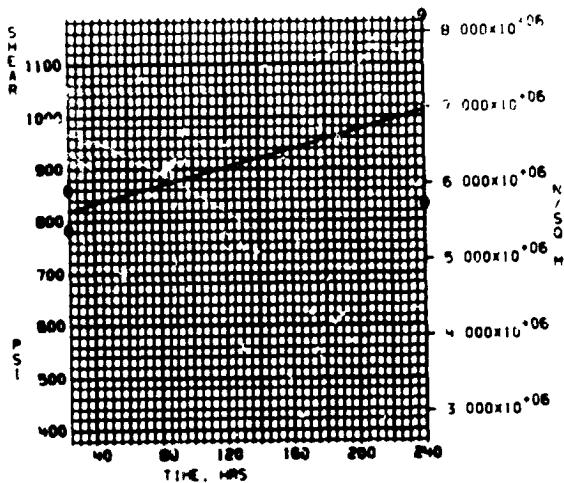
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL: NARMCO ADHESIVE, 7343/7139

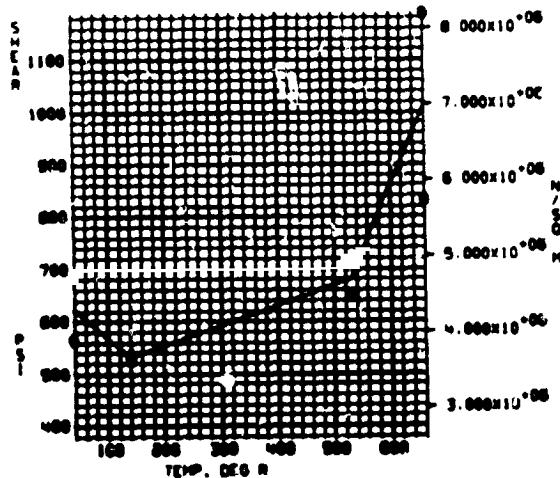


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

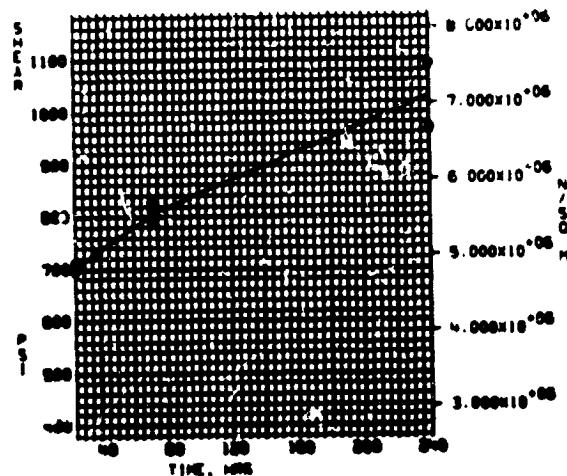
PROPERTY: SHEAR



ENVIRONMENT 2(AB1)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE1)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - NARMCO ADHESIVE, 7343/7139
 PROPERTY - SHEAR

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
	12.0	.638+03	.440+07		12.0	.584+03	.403+07
	12.0	.550+03	.379+07		12.0	.608+03	.419+07
	24.0	.488+03	.336+07		24.0	.543+03	.375+07
	24.0	.556+03	.383+07		24.0	.625+03	.431+07
	72.0	.525+03	.362+07		72.0	.474+03	.327+07
	72.0	.540+03	.373+07		72.0	.371+03	.256+07

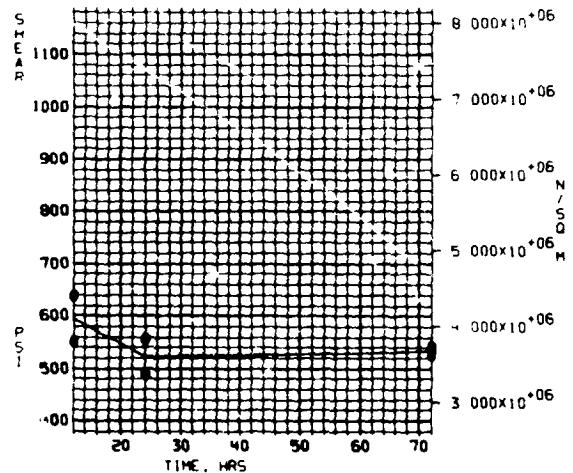
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	HOURS	PSI	N/SQ M	F	DAYS	PSI	N/SQ M
	.5	.504+03	.348+07		4.2	.662+03	.456+07
	.5	.549+03	.379+07		4.2	.584+03	.403+07
	2.0	.595+03	.411+07		150.0	.646+03	.446+07
	2.0	.588+03	.406+07		150.0	.596+03	.411+07
	24.0	.631+03	.435+07				
	24.0	.579+03	.400+07				

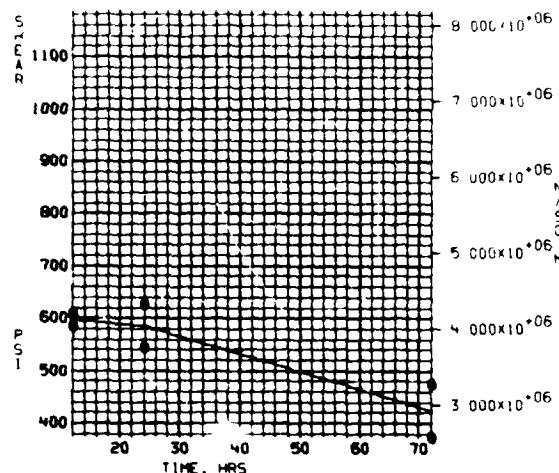
NOTE.
 .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - NARMCO ADHESIVE 7343/7139

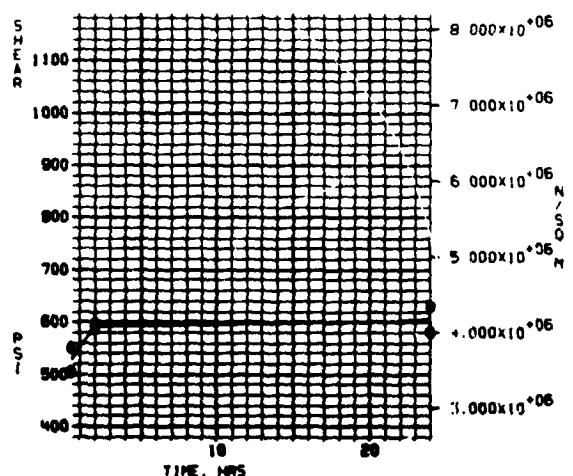


ENVIRONMENT 5
95 PERCENT R H 95 DEG F
(35 DEG C)

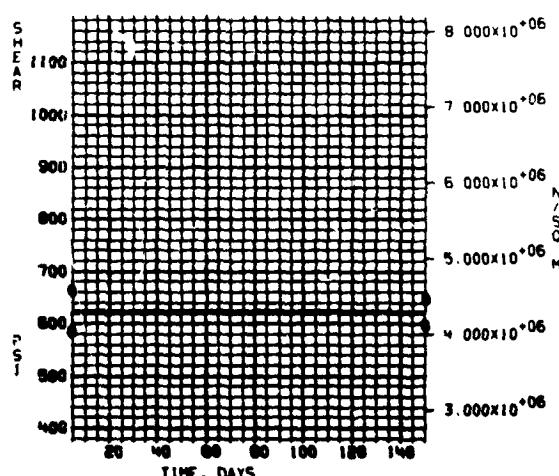
PROPERTY - SHEAR



ENVIRONMENT 6
95 PERCENT R H /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -NARICO ADHESIVE. 7343/7139
 PROPERTY -SHEAR

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

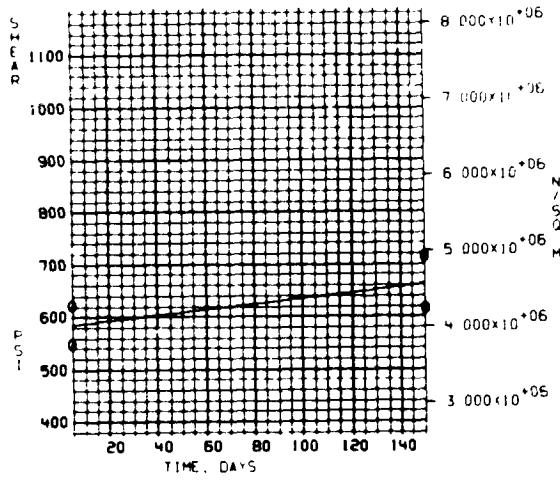
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C).4 HR

F	DAYS	PSI	N/SQ M	F	F	P.P. TORR	PSI	N/SQ M
	4.2	.549+03	.378+07		.100-02		.495+03	.341+07
	4.2	.622+03	.429+07		.100-02		.512+03	.353+07
150.0		.713+03	.492+07		.760+03		SAMPLE DESTROYED	
150.0		.613+03	.423+07		.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL NARMUL AGM-21E, 7343-7139

PROPERTY SHEAR



ENVIRONMENT BIEFI
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - NARMCO ADHESIVE, 7343/7139

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DEG.R (365 DEG.K)

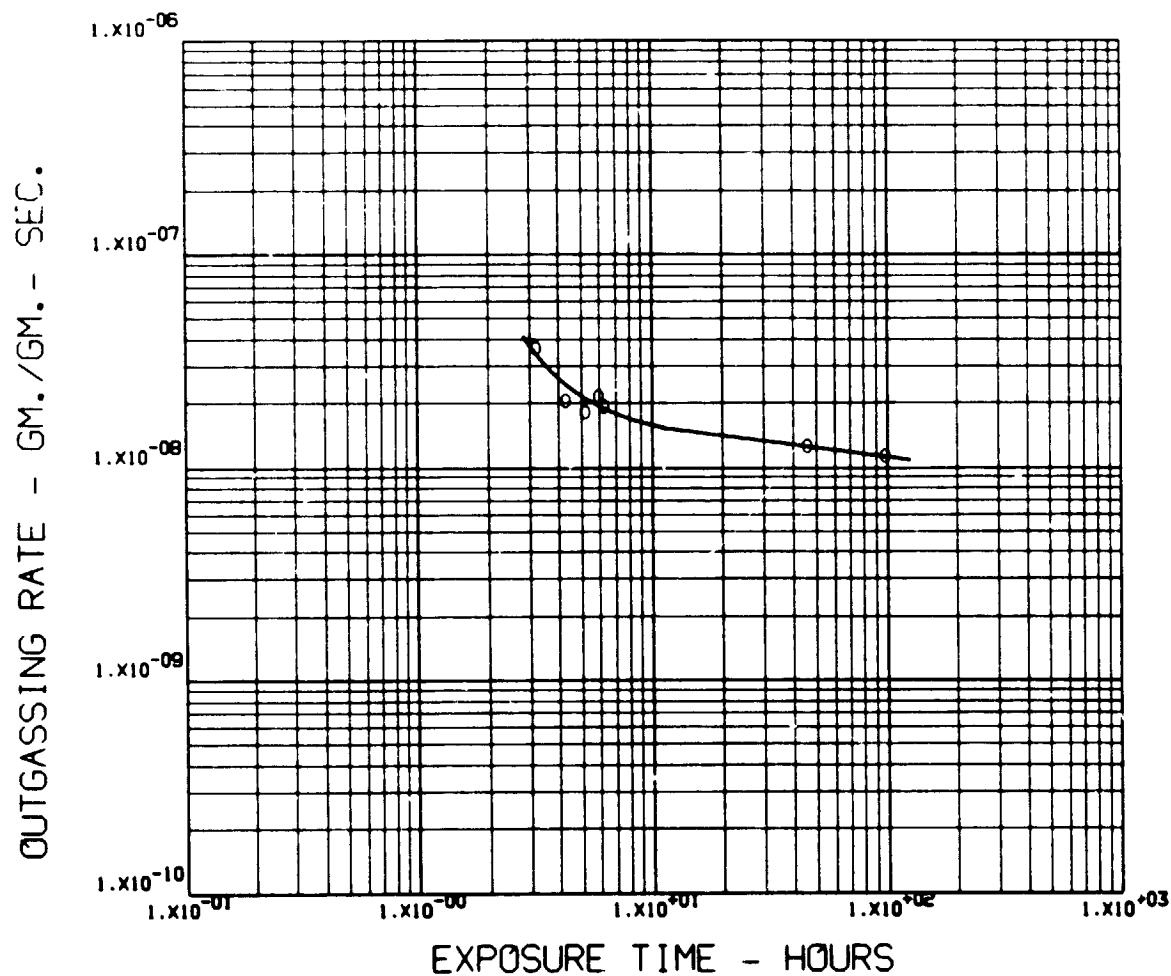
TEST DATE 040771

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .6950 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
3.17	3.57-08	.55	.31	.14
4.25	2.03-08	.69	.24	.08
5.17	1.82-08	.72	.22	.07
5.92	2.13-08	.69	.23	.08
6.25	1.92-08	.72	.21	.06
45.40	1.26-08	.91	.07	.02
97.00	1.12-08	.92	.07	.02

PROPERTY - OUTGASSING
MATERIAL - NARMCO ADHESIVE, 7343/7139



ENVIRONMENT 2B VACUUM, 10-6 TORR, 660 DEG. R. (365 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = NARMCO ADHESIVE, 7343/7139

ENVIRONMENT 2C

vacuum, TUE=06 TORR, 530 DEG.R (295 DEG.K)

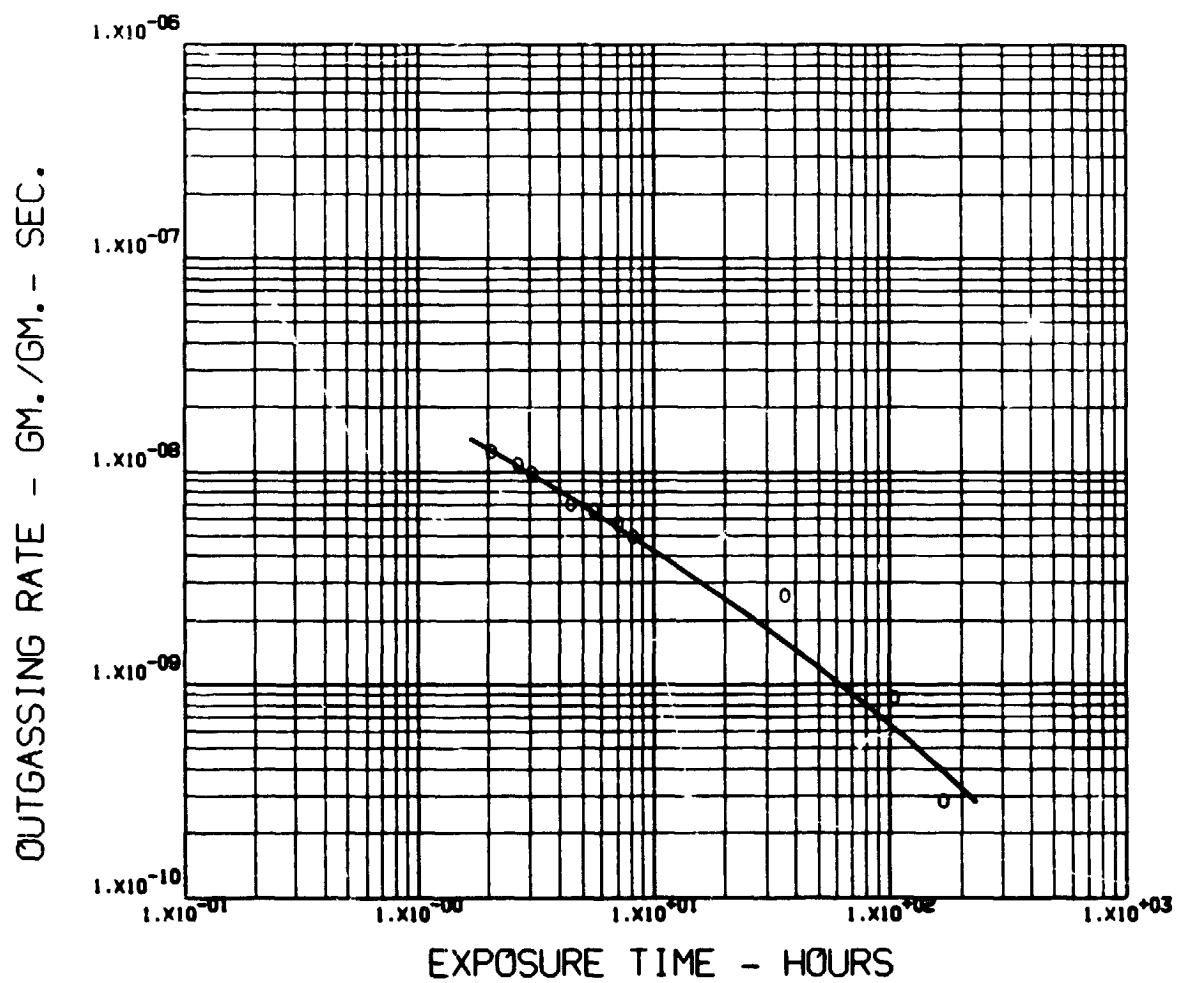
TEST DATE 021571

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .7625 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.05	1.22-08	.52	.31	.17
2.65	1.06-08	.46	.35	.19
3.02	9.83-09	.42	.38	.20
4.45	7.03-09	.44	.37	.19
5.62	6.51-09	.41	.38	.20
7.01	5.66-09	.41	.39	.20
8.20	4.90-09	.38	.42	.20
35.62	2.60-09	.42	.42	.16
104.53	8.60-10	.55	.39	.07
168.05	2.82-10	.66	.31	.02

PROPERTY - OUTGASSING
MATERIAL - NARMCO ADHESIVE, 7343/7139



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - NARMCO ADHESIVE 7343/7139

ENVIRONMENT 4A

VACUUM, 1.0E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS. FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

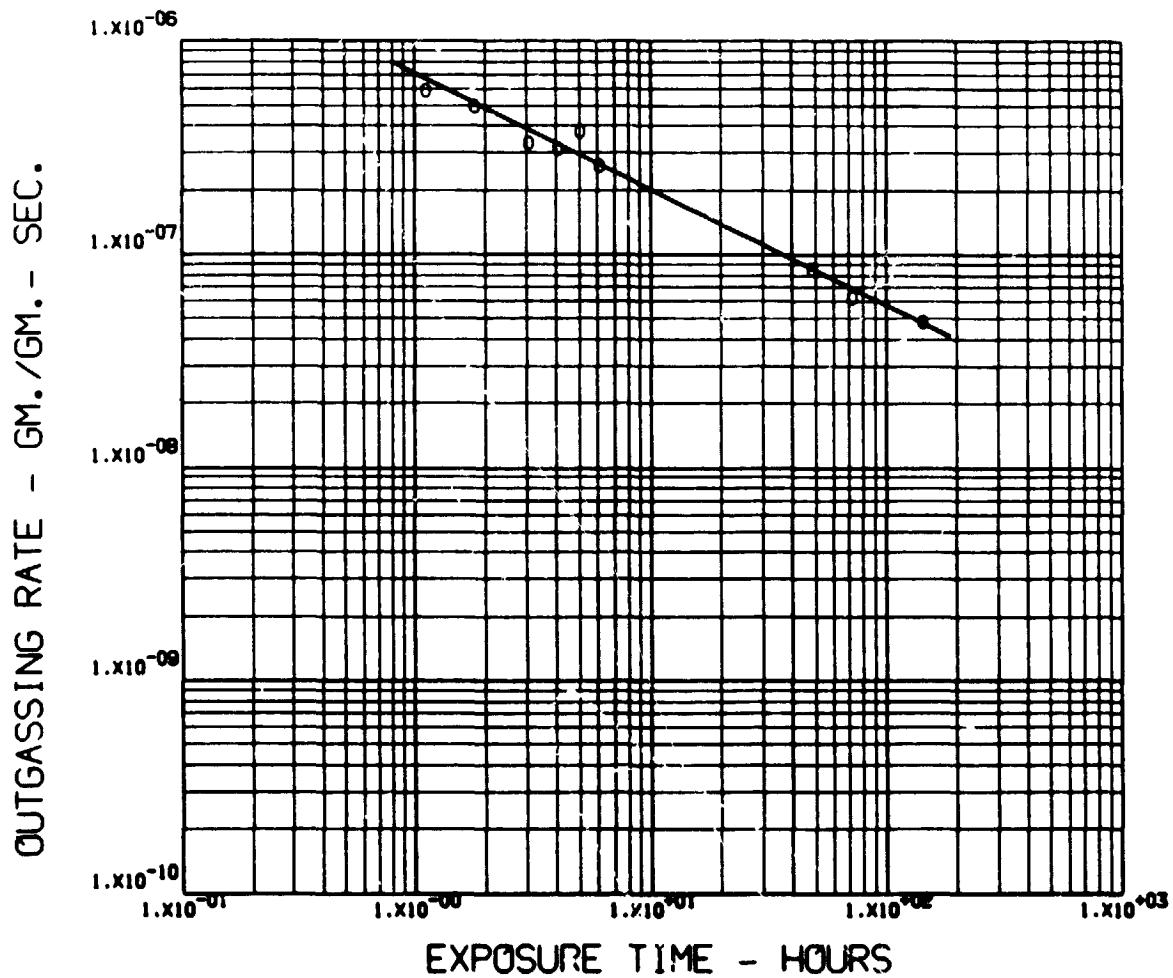
TEST DATE 060172

TEST CHAMBER NO. 4

SAMPLE WEIGHT = .4315 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.11	5.81-07	.92	.01	.06
1.78	4.91-07	.91	.02	.07
3.03	3.27-07	.91	.01	.07
4.03	3.10-07	.98	.01	.01
5.03	3.73-07	.74	.01	.25
6.03	2.59-07	.90	.00	.09
48.50	8.47-08	.74	.01	.25
71.23	6.23-08	.98	.01	.01
142.73	4.83-08	.99	.01	.00

PROPERTY - OUTGASSING
MATERIAL - NARMCO ADHESIVE 7343/7139



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - NARMCO ADHESIVE 7343/7139

ENVIRONMENT 48

VACUUM, 10E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

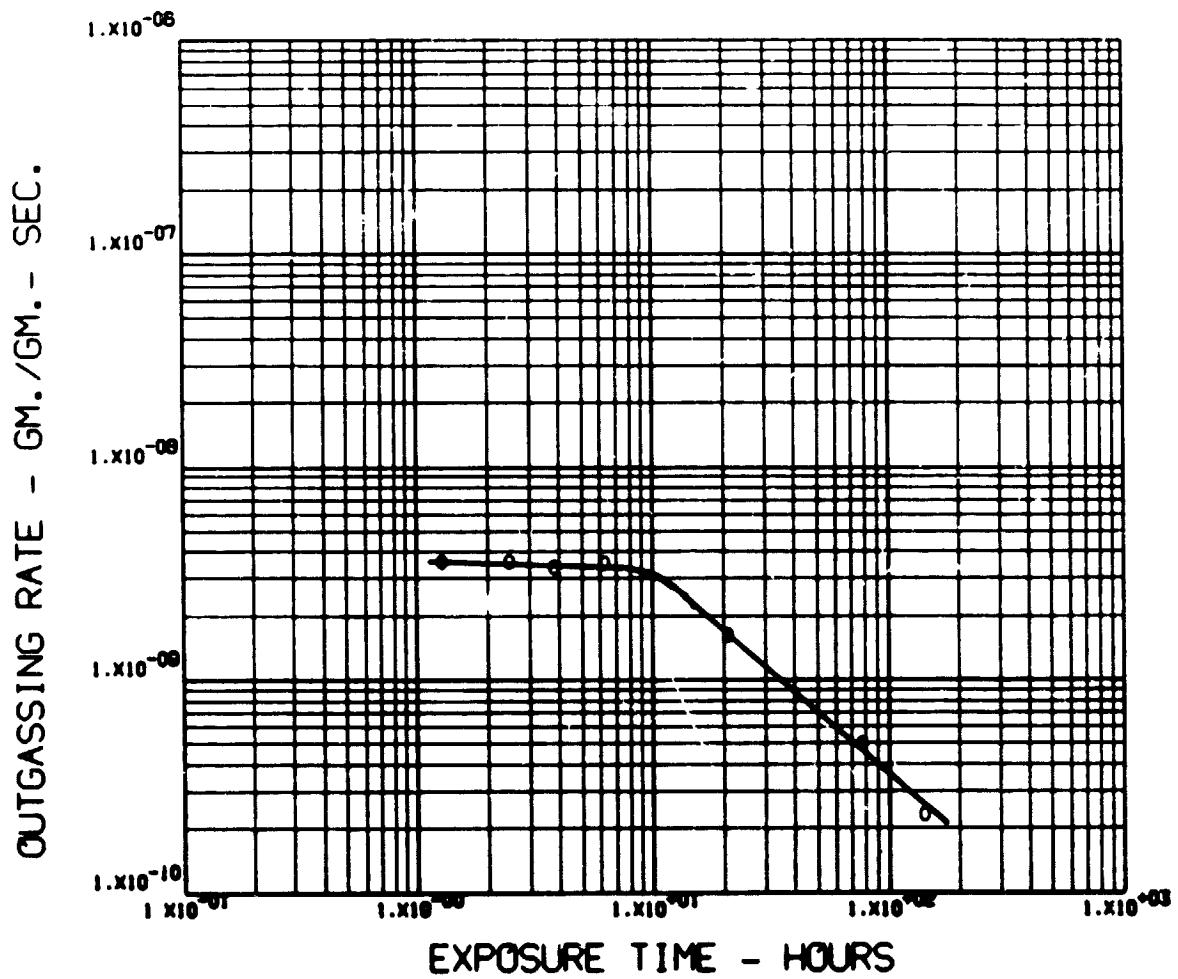
TEST DATE 060771

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .3585 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.27	3.55-09	.13	.41	.46
2.43	3.56-09	.11	.35	.54
3.77	3.33-09	.08	.41	.51
6.19	3.52-09	.14	.34	.53
20.77	1.61-09	.05	.41	.53
76.27	4.92-10	.08	.41	.51
141.10	2.30-10	.13	.44	.42

PROPERTY- OUTGASSING
MATERIAL- NARMCO ADHESIVE, 7343/7139



ENVIRONMENT 4B VACUUM, 10^{-6} TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - GOODYEAR PLIOBOND ADHESIVE, 4001/4004
 PROPERTY - WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.49936+02
I	10.0	.49936+02
I	.0	.50162+02
I	10.0	.50161+02
I	.0	.50339+02
I	150.0	.50338+02
I	.0	.50129+02
I	150.0	.50128+02

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.506 1+02
I	24.0	.50631+02
I	.0	.50128+02
I	24.0	.50127+02
I	.0	.50499+02
I	240.0	.50498+02
I	.0	.50435+02
I	240.0	.50433+02

ENVIRONMENT 2 (HCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R DEG K	GRAMS
I	- -	.50499+02
I	660. 367.	.50498+02
I	- -	.50435+02
I	560. 367.	.50433+02
I	- -	.50463+02
I	530. 294.	.50460+02
I	- -	.50225+02
I	530. 294.	.50223+02
I	- -	.50189+02
I	140. 78.	.50190+02
I	- -	.50265+02
I	140. 78.	.50265+02
I	- -	.50254+02
I	37. 21.	.50253+02
I	- -	.50353+02
I	37. 21.	.50352+02

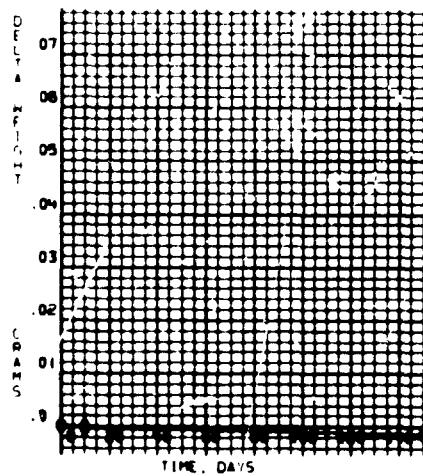
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.50499+02
I	24.0	.50500+02
I	.0	.50235+02
I	24.0	.50230+02
I	.0	.50277+02
I	72.0	.50277+02
I	.0	.50239+02
I	72.0	.50239+02
I	.0	.50155+02
I	240.0	.50153+02
I	.0	.50255+02
I	240.0	.50256+02

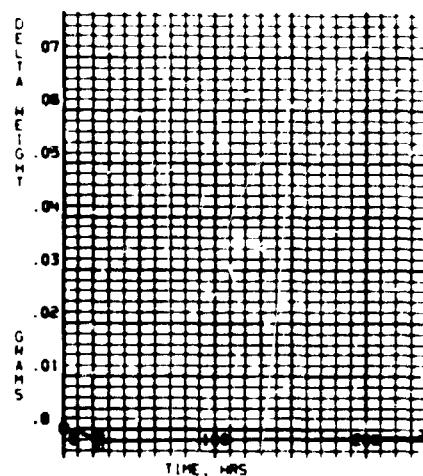
NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 • ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 • THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 • THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - GOODYEAR PILOBOND ADHESIVE, 4001/4004

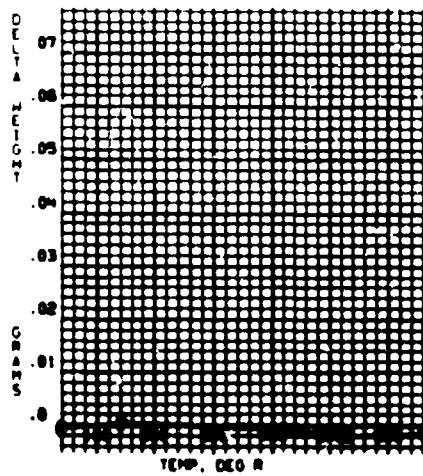
PROPERTY - DELTA WEIGHT



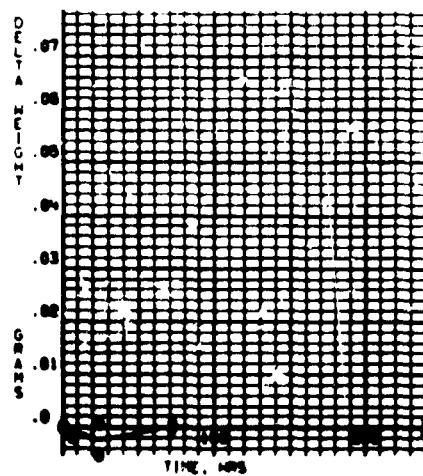
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(LAB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(OVEN)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 100 PERCENT R.H.

MATERIAL - GOODYEAR PLIOBOND ADHESIVE, 4001/4004
 PROPERTY - WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
I	.0	.50660+02
	12.0	.50660+02
I	.0	.50291+02
	12.0	.50290+02
I	.0	.50214+02
	24.0	.50216+02
I	.0	.50437+02
	24.0	.50439+02
I	.0	.50455+02
	72.0	.50455+02
I	.0	.49902+02
	72.0	.49902+02

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
I	.0	.50517+02
	12.0	.50591+02
I	.0	.50558+02
	12.0	.50636+02
I	.0	.50088+02
	24.0	.50148+02
I	.0	.50254+02
	24.0	.50302+02
I	.0	.50061+02
	72.0	.50113+02
I	.0	.49749+02
	72.0	.49797+02

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	GRAMS
I	.0	.49930+02
	.5	.49928+02
I	.0	.50084+02
	.5	.50082+02
I	.0	.50335+02
	2.0	.50333+02
I	.0	.50552+02
	2.0	.50550+02
I	.0	.50174+02
	24.0	.50172+02
I	.0	.50242+02
	24.0	.50241+02

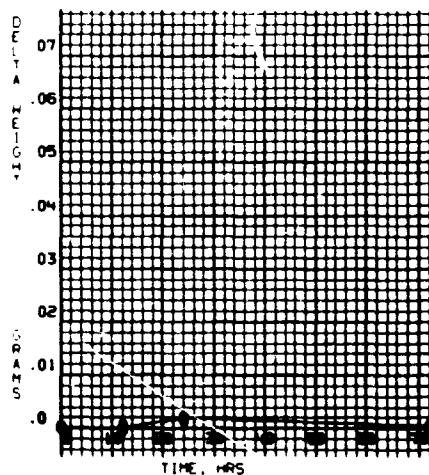
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.48785+02
	4.2	.48785+02
I	.0	.50392+02
	4.2	.50391+02
I	.0	.50200+02
	150.0	.50198+02
I	.0	.50232+02
	150.0	.50230+02

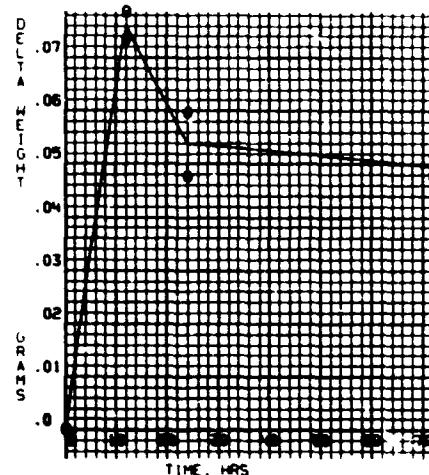
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - GOODYEAR PLIBOND ADHESIVE, 4001/4004

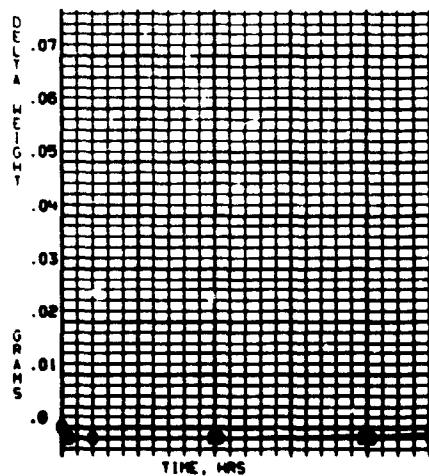
PROPERTY - DELTA WEIGHT



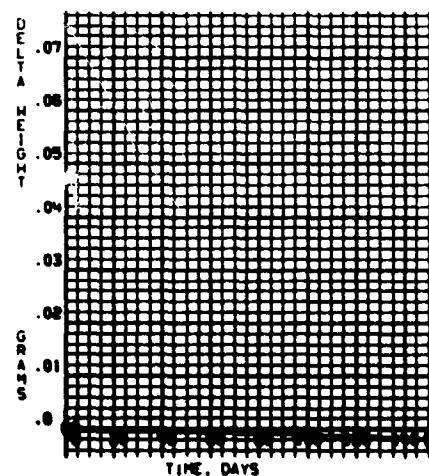
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - GOODYEAR PLIOROND ADHESIVE, 4001/4004
 PROPERTY - WEIGHT

ENVIRONMENT 8 (EF)
 GASFOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.50162+02
	4.2	.50160+02
	.0	.49470+02
	4.2	.49470+02
	.0	.50412+02
	150.0	.50412+02
	.0	.50663+02
	150.0	.50662+02

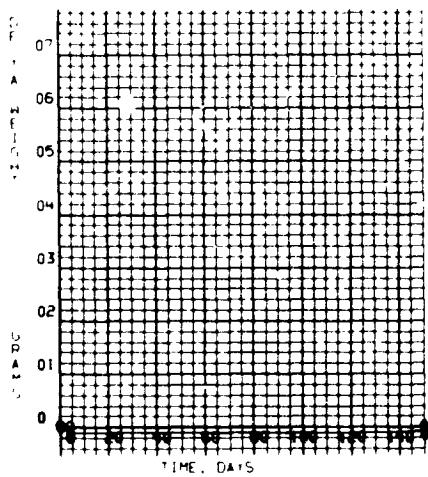
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	GRAMS
	.000		.50403+02
	.100-02		.50402+02
	.000		.50160+02
	.100-02		.50159+02
	.000		.50459+02
	.760+03		.50462+02
	.000		.50056+02
	.760+03		.50056+02

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: IRON PLATE, ALUMINUM, 4010, 4014

PROPERTY: DELTA HEAT



ENVIRONMENT: BIFI
GASEOUS FLUORINE, 70 DEG F
121 DEG C 1 E-03 TORR

MATERIAL - GOODYEAR PLIOROND ADHESIVE, 4001/4004
 PROPERTY - SHEAR

ENVIRONMENT
 CONTROL, 70 DEG F (21 DEG C)

F	UAYS	PSI	N/SQ M
	.0	.288+03	.199+07
	.0	.688+03	.474+07
	10.0	.761+03	.525+07
	10.0	.936+03	.646+07
	150.0	.115+04	.794+07
	150.0	.123+04	.851+07

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

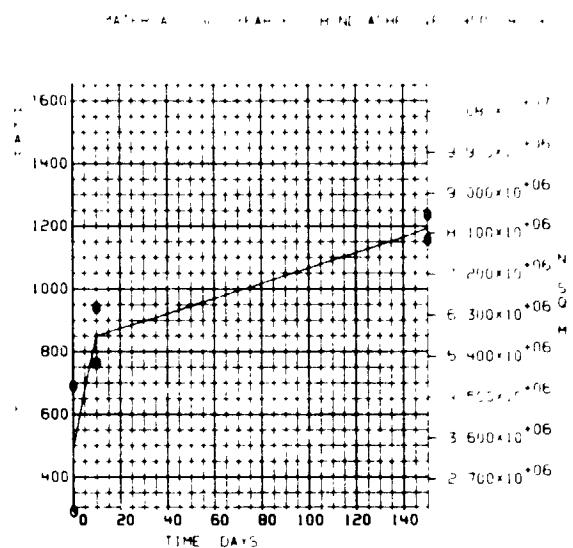
F	HOURS	PSI	N/SQ M
	24.0	.110+04	.757+07
	24.0	.110+04	.758+07
	240.0	.147+04	.101+08
	240.0	.141+04	.974+07

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

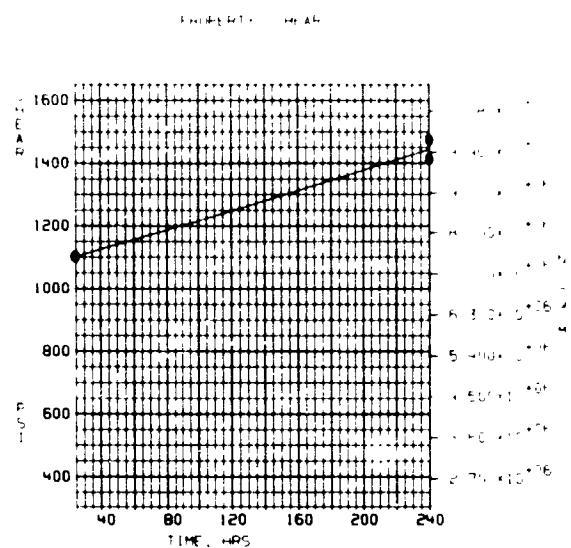
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	DEG R	DEG K	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
660.	367.		.147+04	.101+08		24.0	.896+03	.618+07
660.	367.		.141+04	.974+07		24.0	.996+03	.587+07
530.	294.		.872+03	.601+07		72.0	.112+04	.773+07
530.	294.		.759+03	.524+07		72.0	.108+04	.744+07
140.	78.		.679+03	.468+07		240.0	.120+04	.826+07
140.	78.		.742+03	.512+07		240.0	.133+04	.919+07
37.	21.		.693+03	.478+07				
37.	21.		.682+03	.471+07				

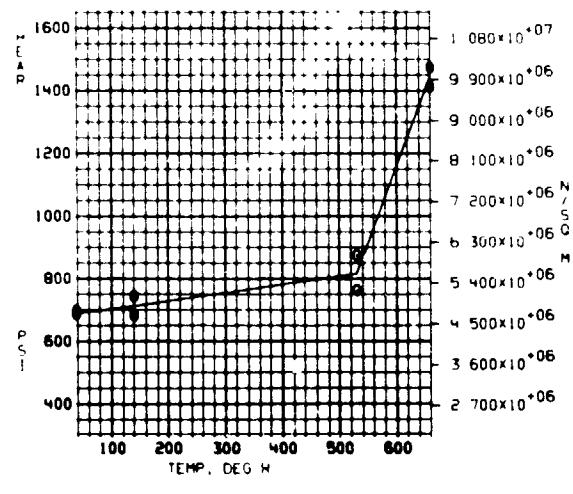
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN



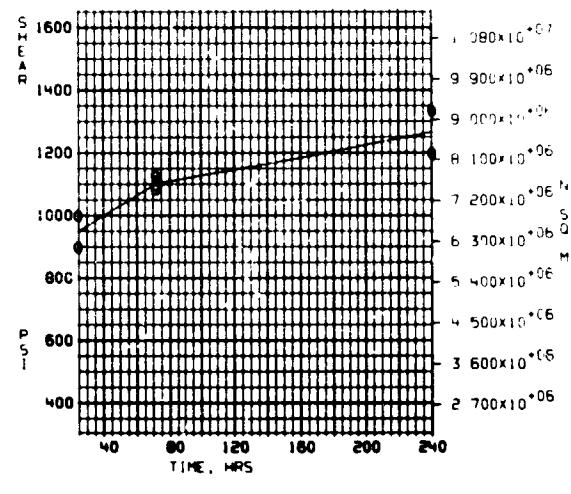
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(A)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - GOODYEAR PLIOBOND ADHESIVE, 4001/4004
 PROPERTY - SHEAR

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
	12.0	.101+04	.694+07		12.0	.640+03	.441+07
	12.0	.919+03	.634+07		12.0	.837+03	.577+07
	24.0	.536+03	.369+07		24.0	.745+03	.514+07
	24.0	.690+03	.476+07		24.0	.725+03	.500+07
	72.0	.601+03	.415+07		72.0	.874+03	.603+07
	72.0	.636+03	.438+07		72.0	.582+03	.401+07

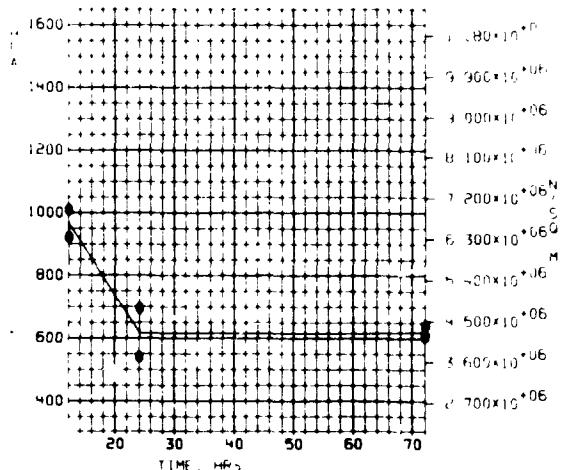
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	HOURS	PSI	N/SQ M	F	DAYS	PSI	N/SQ M
	.5	.404+03	.279+07		4.2	.801+03	.552+07
	.5	.496+03	.342+07		4.2	.864+03	.596+07
	2.0	.625+03	.431+07		150.0	.111+04	.767+07
	2.0	.441+03	.304+07		150.0	.108+04	.746+07
	24.0	.668+03	.461+07				
	24.0	.511+03	.353+07				

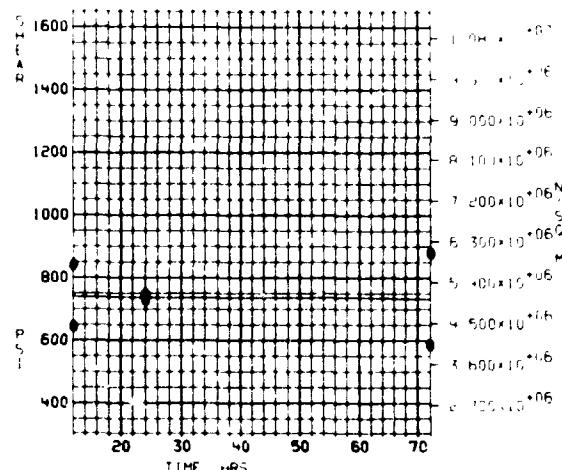
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
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 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: VINYL ARYL FENYL ACRYLIC E-2071-400

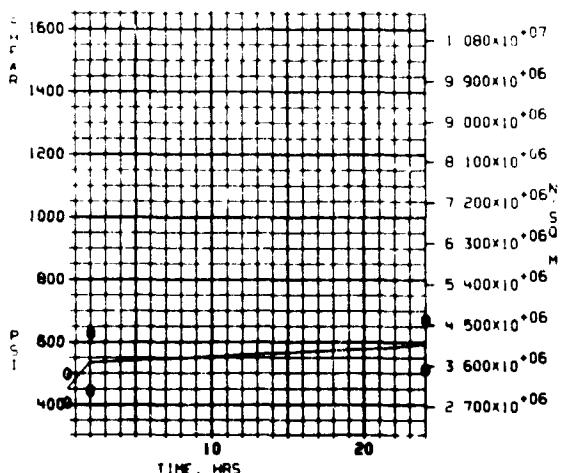


ENVIRONMENT 5
95 PERCENT R.H. 35 DEG F
135 DEG C

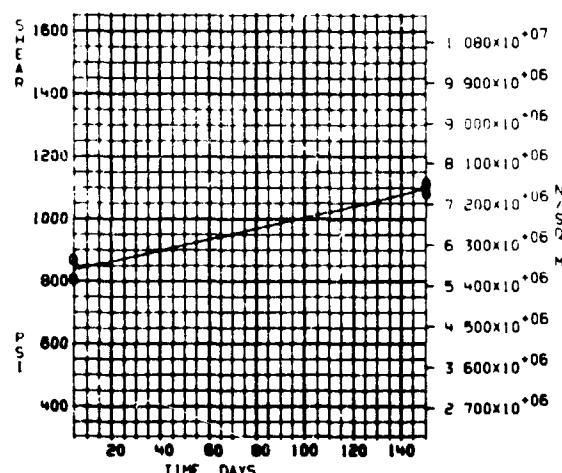
PROPERTY: SHEAR



ENVIRONMENT 6
95 PERCENT R.H. SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL - GOODYEAR PI. IOROND ADHESIVE, 4001/4004
 PROPERTY - SHEAR

ENVIRONMENT B (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

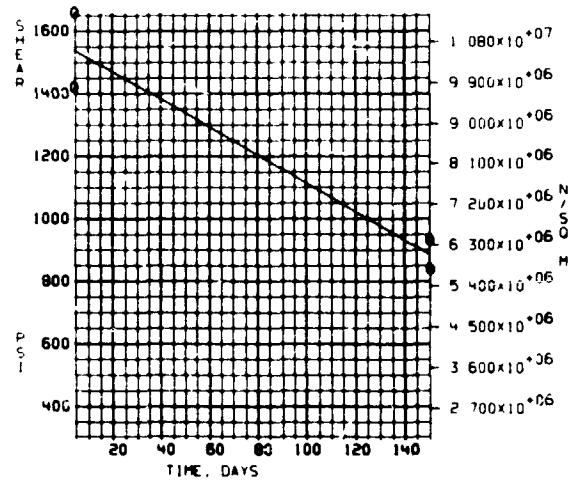
ENVIRONMENT B (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C).4 HR

F	DAYS	PSI	N/SQ M	F	F	P.P.	TORR	PSI	N/SQ M
	4.2	.166+04	.114+08		.100-02		.947+03	.653+07	
	4.2	.142+04	.978+07		.100-02		.843+03	.582+07	
150.0		.929+03	.641+07		.760+03		.895+03	.617+07	
150.0		.839+03	.579+07		.760+03		.776+03	.535+07	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL GOODWEAR PLIBOND ADHESIVE, 4001/4004

PROPERTY- SHEAR



ENVIRONMENT B (E⁺)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - GOODYEAR PLIOBOND ADHESIVE

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DEG.R (365 DEG.K)

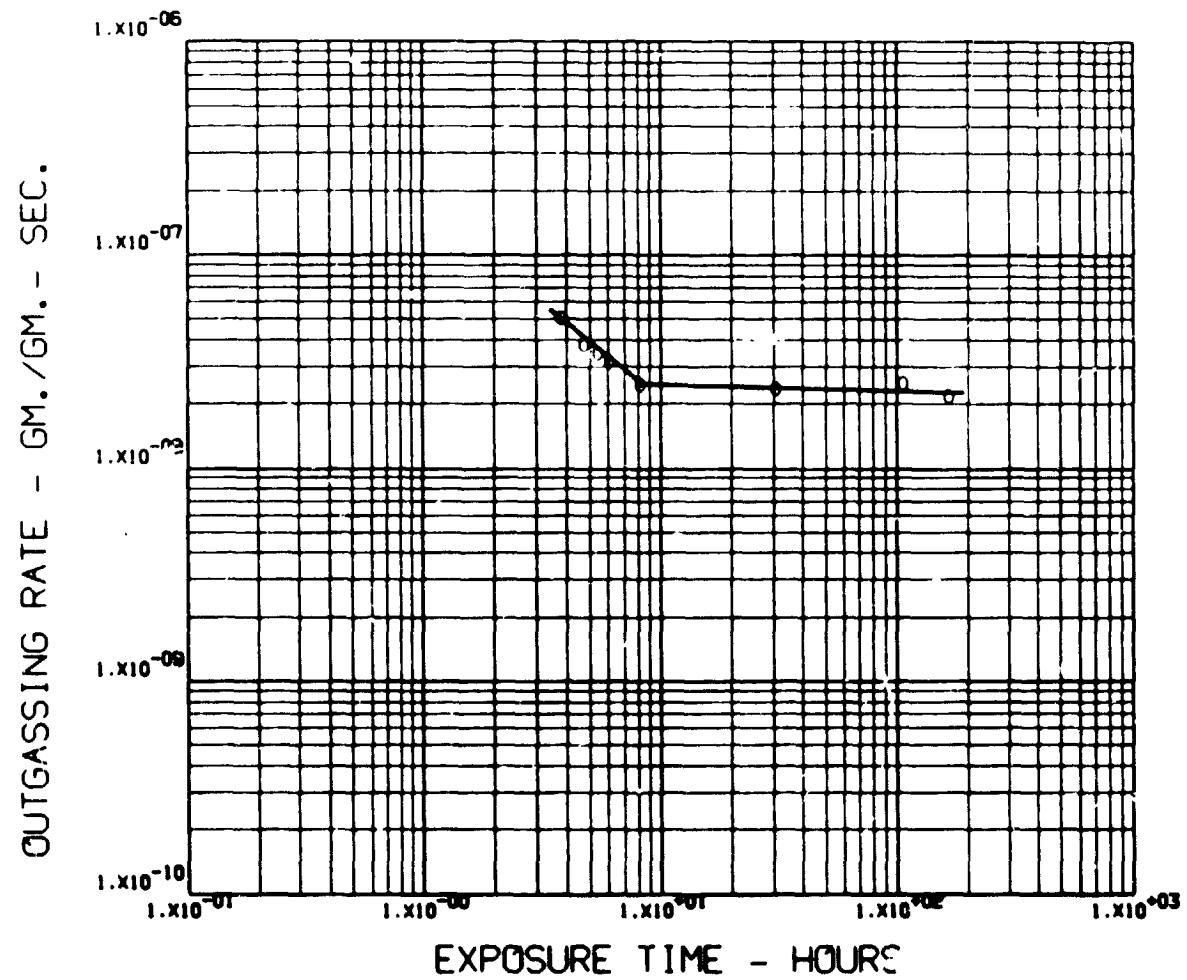
TEST DATE 040871

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.7833 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
3.75	5.00-08	.67	.25	.08
4.67	3.73-08	.68	.25	.07
5.33	3.44-08	.74	.21	.06
6.00	3.11-08	.68	.26	.06
8.17	2.47-08	.73	.23	.04
30.42	2.34-08	.82	.14	.05
106.42	2.47-08	.80	.17	.04
165.00	2.18-08	.92	.05	.04

PROPERTY - OUTGASSING
MATERIAL - GOODYEAR PLIOBOND ADHESIVE



ENVIRONMENT 2B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - GOODYEAR PLIOPOND ADHESIVE

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

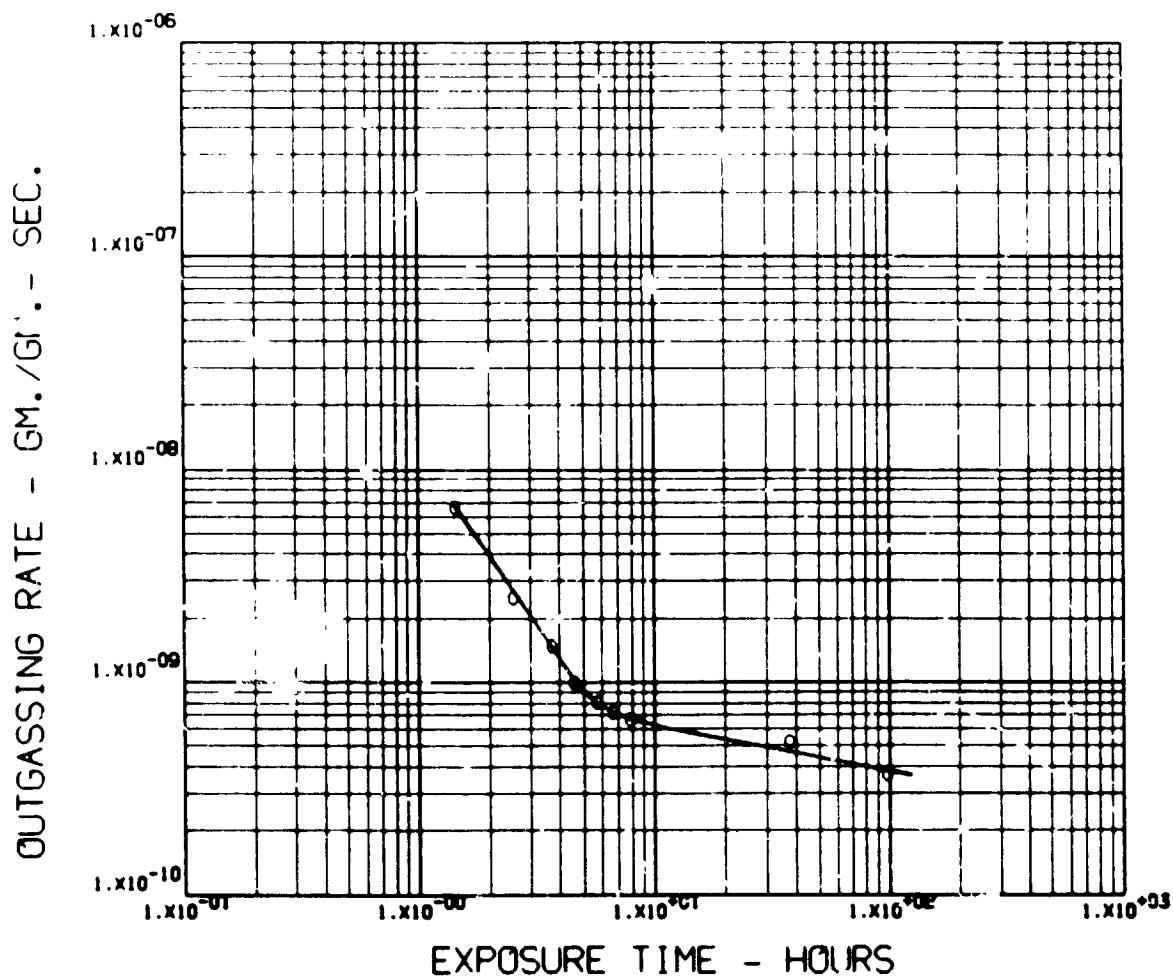
TEST DATE 021671

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.9680 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.42	6.61-09	.87	.09	.04
2.52	2.45-09	.88	.11	.02
3.67	1.46-09	.79	.18	.03
4.58	4.81-10	.80	.16	.03
5.67	7.97-10	.77	.19	.05
6.67	7.17-10	.75	.20	.05
7.88	6.60-10	.73	.21	.06
37.37	5.21-10	.30	.52	.18
98.25	3.64-10	.03	.74	.23

PROPERTY - OUTGASSING
MATERIAL - GOODYEAR PLIOBOND ADHESIVE



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - GOODYEAR PLIOBOND ADHESIVE

ENVIRONMENT 4A

VACUUM, 10E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

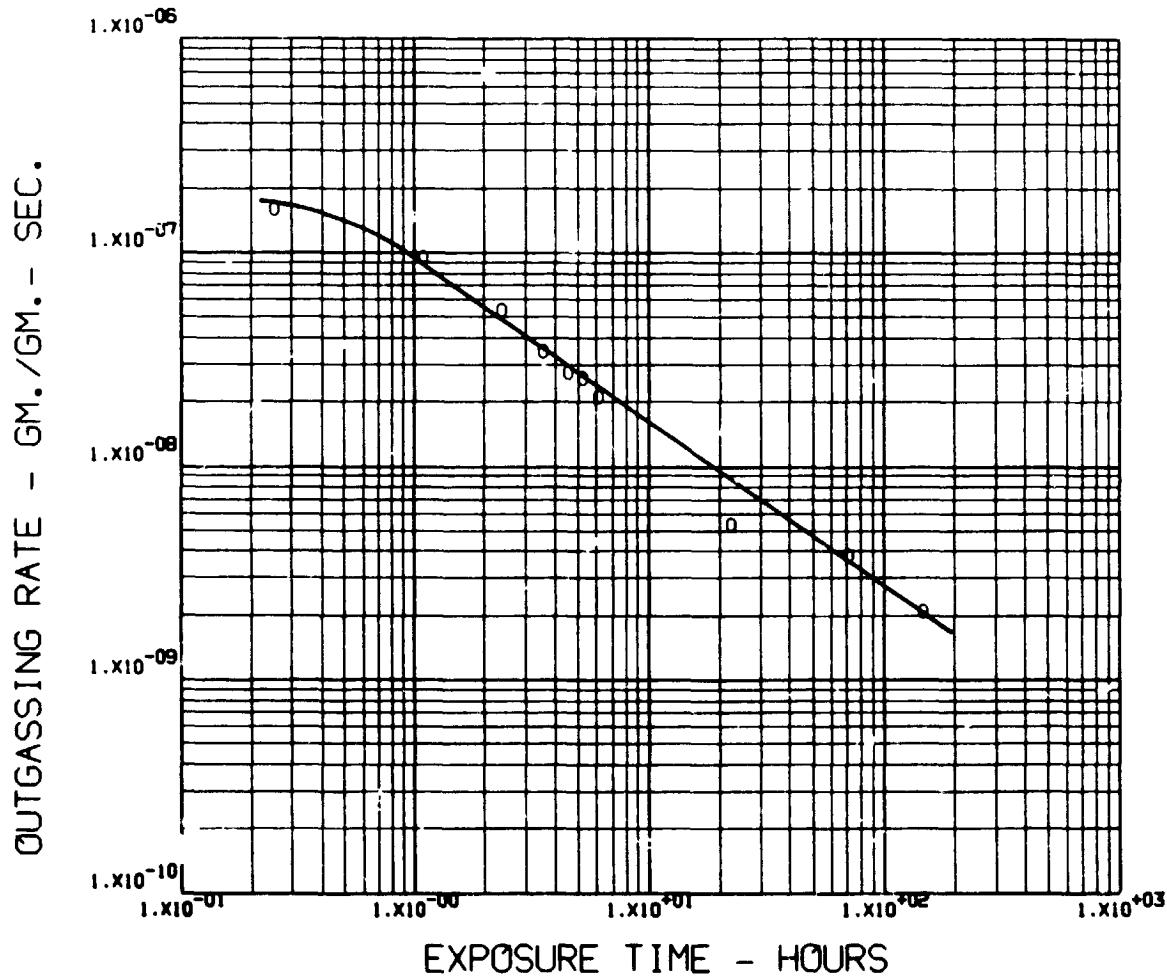
TEST DATE 060572

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .6887 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.25	1.58-07	.24	.00	.76
1.08	9.48-08	.70	.00	.30
2.33	5.34-08	.58	.00	.42
3.50	3.42-08	.67	.00	.33
4.50	2.74-08	.71	.00	.29
5.25	2.56-08	.66	.00	.34
6.08	2.09-08	.73	.00	.27
22.33	5.29-09	.79	.00	.21
70.08	3.79-09	.71	.03	.26
146.08	2.07-09	.79	.01	.20

PROPERTY- OUTGASSING
MATERIAL- GOODYEAR PLIOBOND ADHESIVE



ENVIRONMENT 4A VACUUM. 10⁻⁶ TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - GOODYEAR PLIOPOND ADHESIVE

ENVIRONMENT 4B

VACUUM, 1.1E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR 4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

TEST DATE 060371

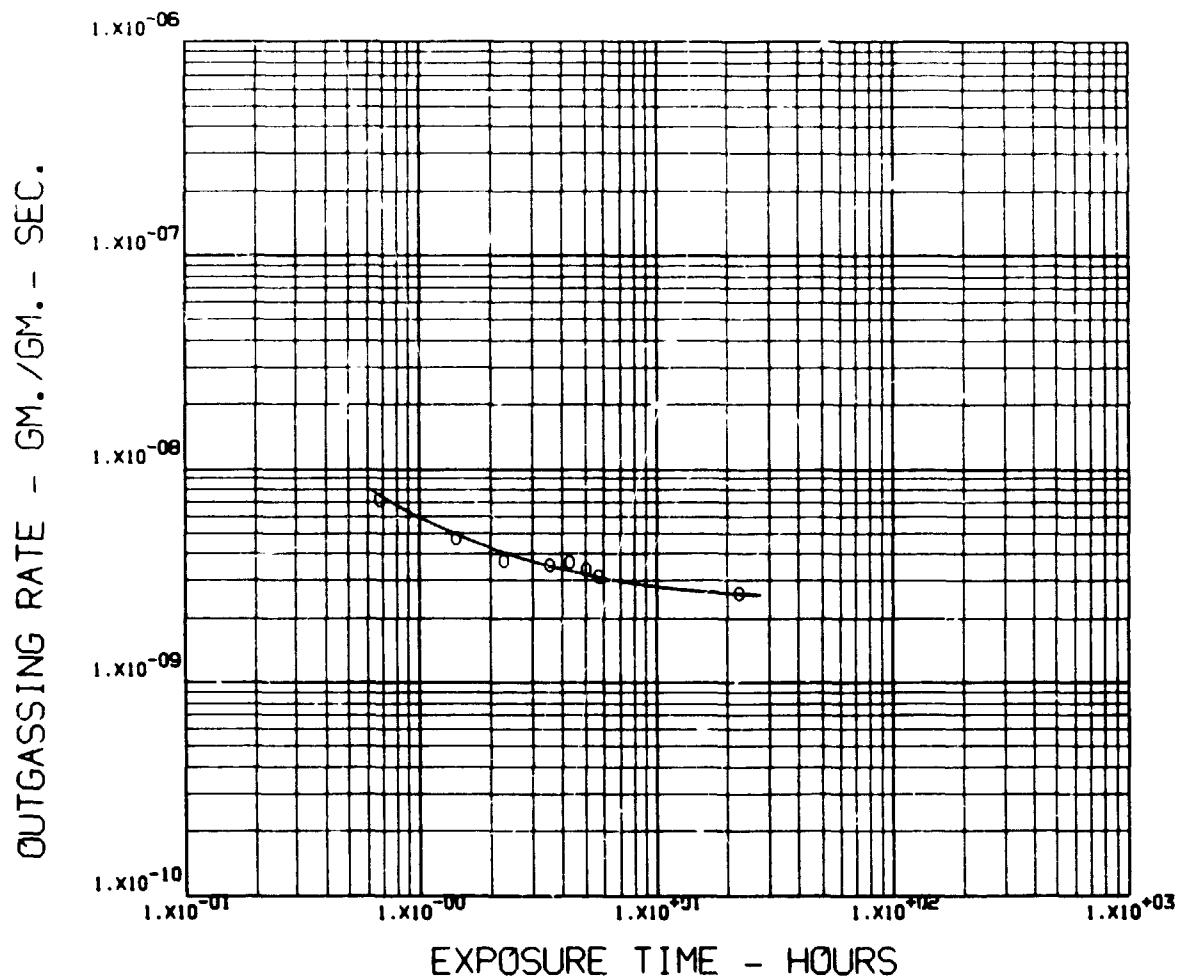
TEST CHAMBER NO. 4

SAMPLE WEIGHT = .6730 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.67	7.13-09	.12	.60	.28
1.42	4.69-09	.14	.53	.33
2.25	3.70-09	.21	.58	.21
3.50	3.49-09	.22	.44	.35
4.25	3.60-09	.08	.44	.48
5.00	3.35-09	.22	.23	.55
5.67	3.10-09	.24	.40	.35
22.27	2.59-09	.16	.41	.43

PROPERTY - OUTGASSING

MATERIAL - GOODYEAR PLIOBOND ADHESIVE



ENVIRONMENT 4B VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -POLYURETHANE FOAM, BX-250 A
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.29650+00
I	10.0	.29580+00
I	.0	.29650+00
I	10.0	.29500+00
I	.0	.29300+00
I	150.0	.29200+00
I	.0	.28800+00
I	150.0	.28720+00

ENVIRONMENT 2 (AR)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.28600+00
I	24.0	.27400+00
I	.0	.29500+00
I	24.0	.27250+00
I	.0	.29650+00
I	240.0	.27950+00
I	.0	.28900+00
	240.0	.27250+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.29650+00
I	660.	367.	.27950+00
I	-	-	.28900+00
I	660.	367.	.27250+00
I	-	-	.28500+00
I	530.	294.	.27750+00
I	-	-	.28050+00
I	530.	294.	.27250+00
I	-	-	.28250+00
I	140.	78.	.28140+00
I	-	-	.27950+00
I	140.	78.	.27810+00
I	-	-	.28300+00
I	37.	21.	.28150+00
I	-	-	.29250+00
I	37.	21.	.29050+00

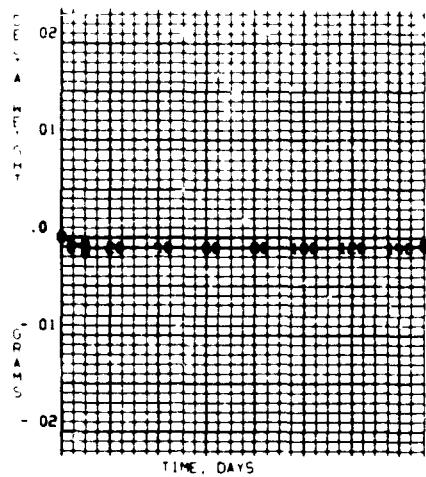
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.29350+00
I	24.0	.28680+00
I	.0	.28800+00
I	24.0	.28100+00
I	.0	.28600+00
I	72.0	.27680+00
I	.0	.28550+00
I	72.0	.27550+00
I	.0	.29000+00
I	240.0	.27450+00
I	.0	.29250+00
I	240.0	.27850+00

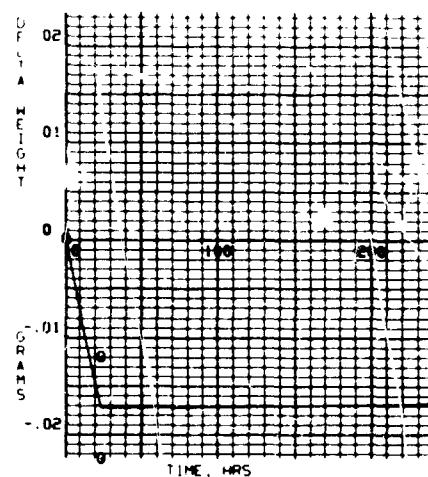
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: POLYURETHANE FILM BX 250 A

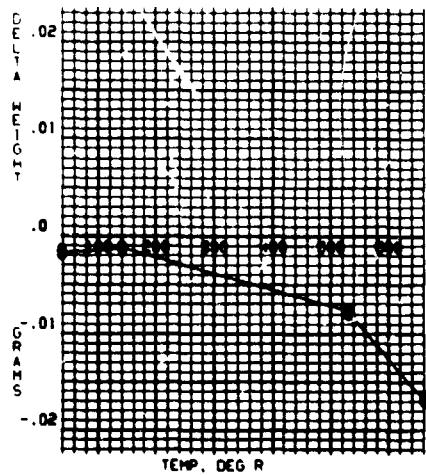
PROPERTY: DELTA HEIGHT



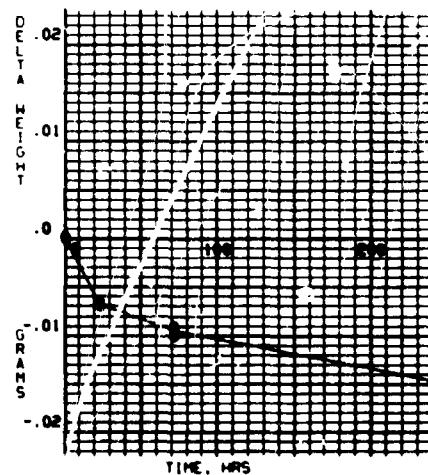
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -POLYURETHANE FOAM, BX-250 A
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.29400+00
	12.0	.29200+00
	.0	.29750+00
	12.0	.29620+00
	.0	.29400+00
	24.0	.29300+00
	.0	.29100+00
	24.0	.29000+00
	.0	.29050+00
	72.0	.29000+00
	.0	.28850+00
	72.0	.28830+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.29250+00
	12.0	.30350+00
	.0	.28950+00
	12.0	.30150+00
	.0	.29050+00
	24.0	.30180+00
	.0	.29050+00
	24.0	.30000+00
	.0	.29150+00
	72.0	.30950+00
	.0	.29200+00
	72.0	.31550+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

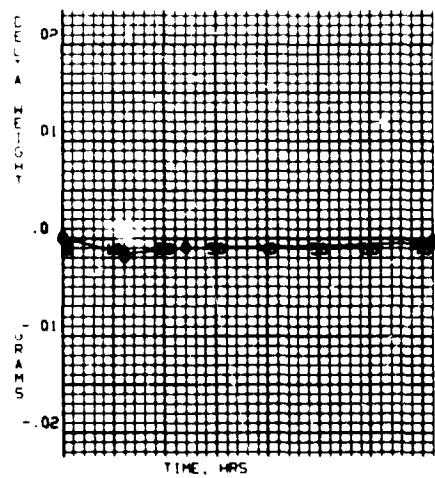
F	HOURS	GRAMS
	.0	.29450+00
	.5	.29332+00
	.0	.29250+00
	.5	.29100+00
	.0	.28900+00
	2.0	.28790+00
	.0	.28950+00
	2.0	.28880+00
	.0	.29050+00
	24.0	.28950+00
	.0	.29050+00
	24.0	.28950+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.29150+00
	4.2	.28450+00
	.0	.29200+00
	4.2	.28500+00
	.0	.28900+00
	150.0	.28000+00
	.0	.29700+00
	150.0	.28900+00

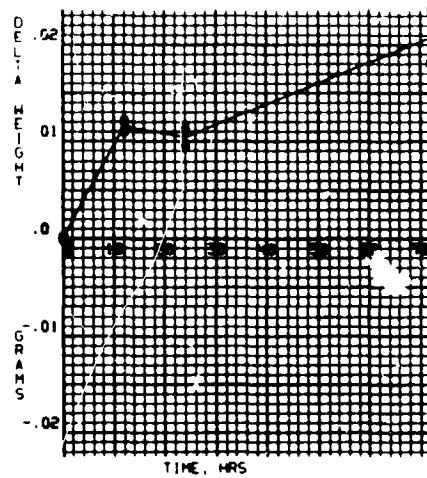
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL POLYURETHANE FOAM BX-250 A

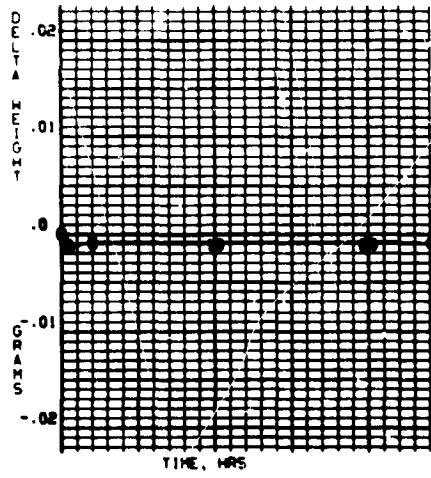


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

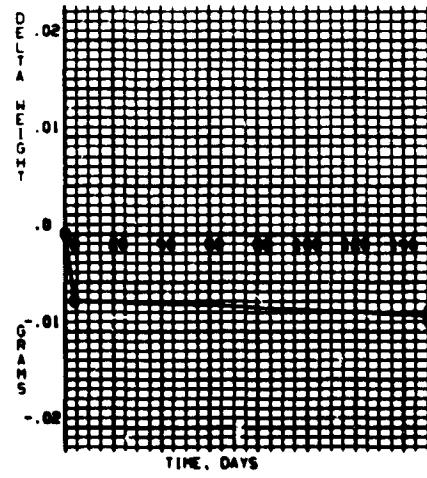
PROPERTY DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 6(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -POLYURETHANE FOAM, BX-250 A
 PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	UAYS	GRAMS
I	.0	.28000+00
	4.2	.27750+00
I	.0	.29400+00
	4.2	.29150+00
I	.0	.29450+00
	150.0	.28600+00
I	.0	.28950+00
	150.0	.28150+00

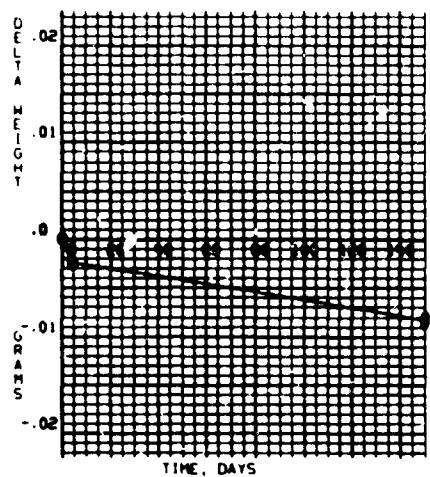
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	GRAMS
I	.000	.29050+00	
	.100-02	.28800+00	
I	.000	.29650+00	
	.100-02	.29450+00	
I	.000	.28200+00	
	.760+03	SAMPLE DESTROYED	
I	.000	.29350+00	
	.760+03	SAMPLE DESTROYED	

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - POLYURETHANE FOAM, BX-250 A

PROPERTY - DELTA WEIGHT



ENVIRONMENT (BIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -POLYURETHANE FOAM, BX-250 A
PROPERTY -DENSITY

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	PCF	G/CC
	.0	.184+01	.295-01
	10.0	.182+01	.291-01
	.0	.184+01	.295-01
	10.0	.183+01	.293-01
	.0	.184+01	.294-01
	150.0	.180+01	.289-01
	.0	.184+01	.295-01
	150.0	.181+01	.289-01

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	PCF	G/CC
	.0	.185+01	.296-01
	24.0	.145+01	.232-01
	.0	.184+01	.296-01
	24.0	.137+01	.220-01
	.0	.184+01	.295-01
	240.0	.136+01	.218-01
	.0	.183+01	.292-01
	240.0	.135+01	.216-01

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

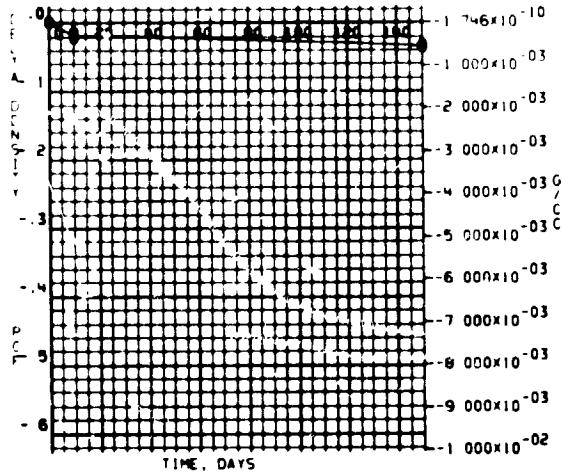
F	DEG R	DEG K	PCF	G/CC
	-	-	.184+01	.295-01
	660.	367.	.136+01	.218-01
	-	-	.183+01	.292-01
	660.	367.	.135+01	.216-01
	-	-	.184+01	.294-01
	530.	294.	.175+01	.280-01
	-	-	.183+01	.294-01
	530.	294.	.174+01	.278-01
	-	-	.183+01	.294-01
	140.	78.	.179+01	.287-01
	-	-	.183+01	.293-01
	140.	78.	.179+01	.286-01
	-	-	.183+01	.293-01
	37.	21.	.177+01	.283-01
	-	-	.184+01	.294-01
	37.	21.	.176+01	.283-01

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	PCF	G/CC
	.0	.184+01	.294-01
	24.0	.133+01	.213-01
	.0	.184+01	.295-01
	24.0	.134+01	.215-01
	.0	.183+01	.294-01
	72.0	.126+01	.202-01
	.0	.184+01	.295-01
	72.0	.125+01	.200-01
	.0	.184+01	.295-01
	240.0	.122+01	.195-01
	.0	.185+01	.296-01
	240.0	.124+01	.198-01

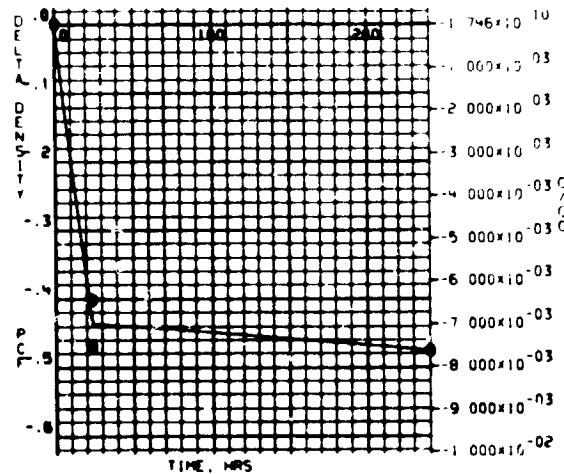
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: POLYURETHANE FOAM BX-250 A

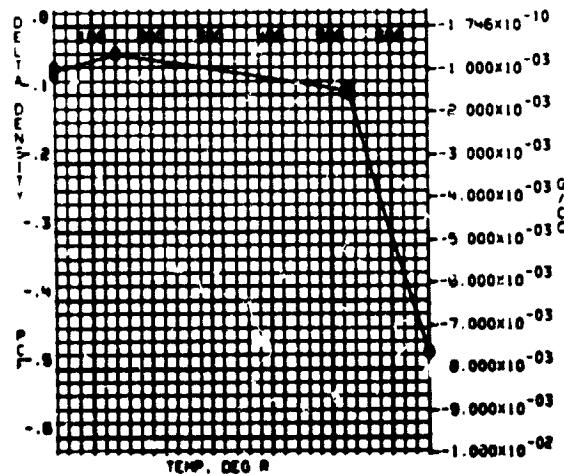


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

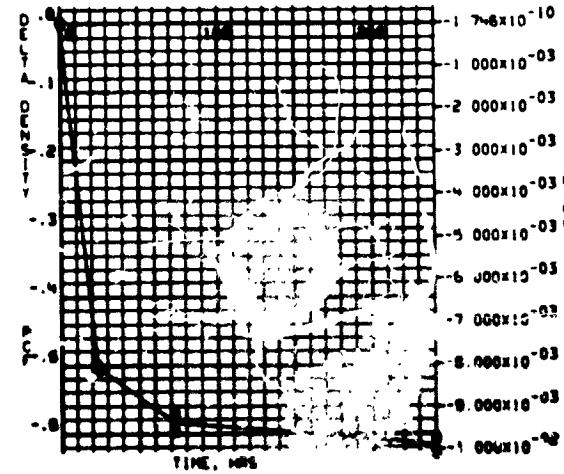
PROPERTY: DELTA DENSITY



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1-E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
130W TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -POLYURETHANE FOAM, RX-250 A
PROPERTY -DENSITY

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

ENVIRONMENT 6
95 PERCENT R.H. SALT AIR
95 DEG F (35 DEG C)

F	HOURS	PCF	G/CC	F	HOURS	PCF	G/CC
	.0	.185+01	.296-01		.0	.183+01	.294-01
	12.0	.180+01	.289-01		12.0	.183+01	.293-01
	.0	.185+01	.297-01		.0	.184+01	.295-01
	12.0	.179+01	.287-01		12.0	.177+01	.283-01
	.0	.184+01	.295-01		.0	.184+01	.294-01
	24.0	.176+01	.282-01		24.0	.184+01	.295-01
	.0	.184+01	.295-01		.0	.185+01	.296-01
	24.0	.172+01	.275-01		24.0	.184+01	.295-01
	.0	.184+01	.295-01		.0	.184+01	.295-01
	72.0	.177+01	.284-01		72.0	.184+01	.295-01
	.0	.184+01	.294-01		.0	.185+01	.296-01
	72.0	.177+01	.284-01		72.0	.187+01	.300-01

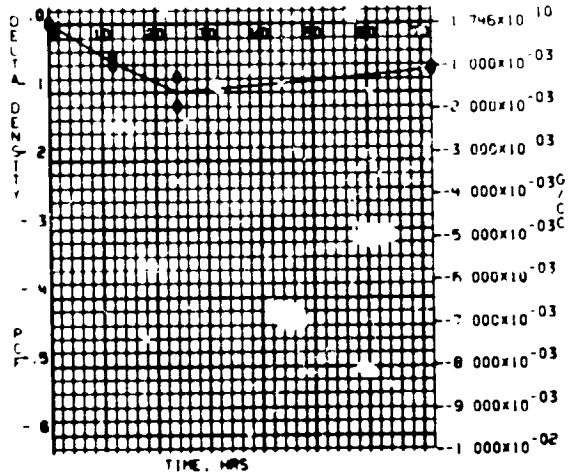
ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	HOURS	PCF	G/CC	F	DAYS	PCF	G/CC
	.0	.184+01	.294-01		.0	.185+01	.296-01
	.5	.178+01	.285-01		4.2	.177+01	.283-01
	.0	.184+01	.294-01		.0	.184+01	.294-01
	.5	.179+01	.286-01		4.2	.174+01	.279-01
	.0	.183+01	.294-01		.0	.182+01	.292-01
	2.0	.175+01	.281-01		150.0	.175+01	.280-01
	.0	.184+01	.294-01		.0	.185+01	.296-01
	2.0	.176+01	.282-01		150.0	.175+01	.280-01
	.0	.183+01	.294-01				
	24.0	.180+01	.289-01				
	.0	.184+01	.294-01				
	24.0	.179+01	.287-01				

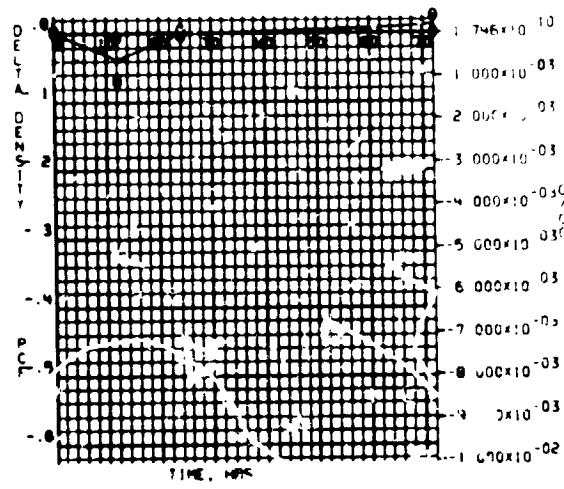
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: POLYURETHANE FOAM BX 250 A

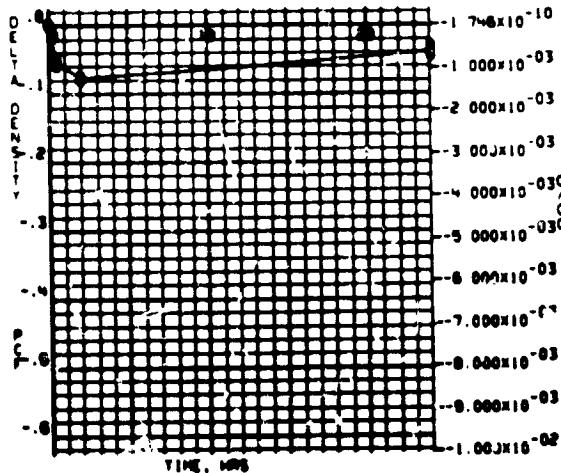


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

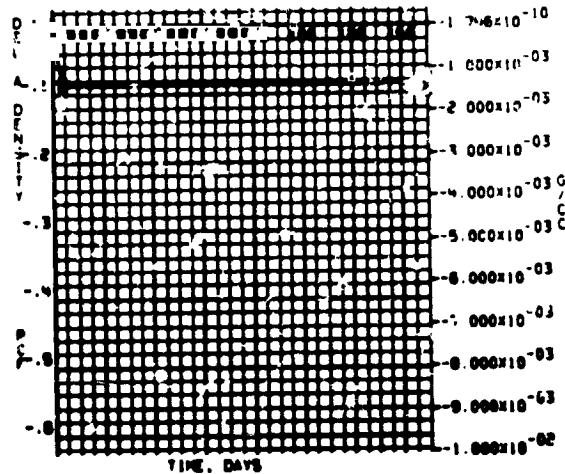
PROPERTY- DELTA DENSITY



ENVIRONMENT 5
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.0E-03 TORR

MATERIAL - POLYURETHANE FOAM, BX-250 A
 PROPERTY - DENSITY

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

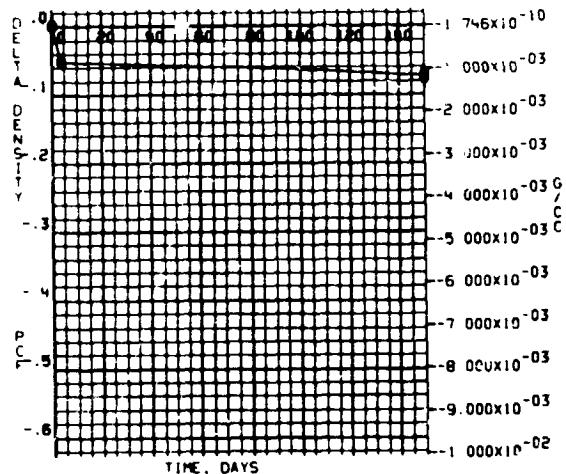
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F (35 DEG C) .4 HR

F	DAYs	PCF	G/CC	F	F	P.P.	Torr	PCF	G/CC
	.0	.183+01	.293-01		.000			.185+01	.296-01
	4.2	.178+01	.285-01			.100-02		.180+01	.288-01
	.0	.184+01	.295-01		.000			.187+01	.299-01
	4.2	.179+01	.286-01			.100-02		.181-01	.290-01
	.0	.184+01	.295-01		.000			.183+01	.293-01
	150.0	.176+01	.283-01			.760+03		SAMPLE DESTROYED	
	.0	.186+01	.297-01		.000			.184+01	.294-01
	150.0	.179+01	.286-01			.760+03		SAMPLE DESTROYED	

NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL I)
 • ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 • THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 • THE E+01 ETC. IS THE EXPONENT OF 10
 • THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL POLYURETHANE FOAM, BX-250 A

PROPERTY- DELTA DENSITY



ENVIRONMENT B(FF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -POLYURETHANE FOAM, BX-250 A
 PROPERTY -COMPRESSIVE STRENGTH

ENVIRONMENT 1			ENVIRONMENT 2 (AB)		
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DAYS	PSI	N/SQ M	F	HOURS
.0		.365+02	.252+06		
.0		.365+02	.252+06	24.0	
10.0		.352+02	.243+06	24.0	
10.0		.362+02	.250+06	240.0	
150.0		.361+02	.249+06	240.0	
150.0		.369+02	.254+06		

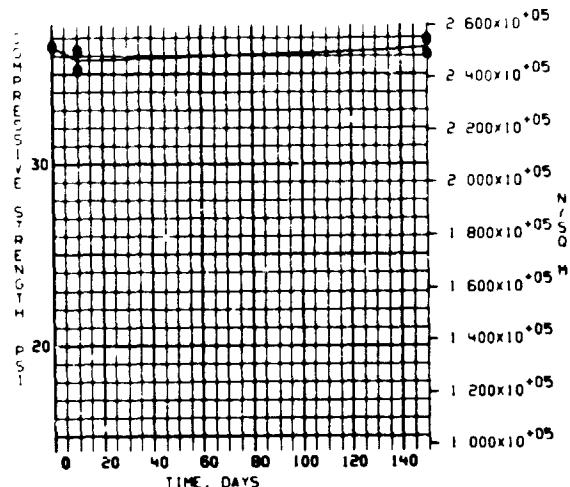
ENVIRONMENT 2 (HCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	DEG K	DEG C	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
660.	367.		.151+02	.104+06		24.0	.216+02	.149+06
660.	367.		.141+02	.972+05		24.0	.219+02	.151+06
530.	294.		.316+02	.218+06		72.0	.202+02	.140+06
530.	294.		.286+02	.197+06		72.0	.198+02	.136+06
140.	78.		.349+02	.241+06		240.0	.195+02	.135+06
140.	78.		.352+02	.243+06		240.0	.194+02	.134+06
37.	21.		.344+02	.237+06				
37.	21.		.352+02	.243+06				

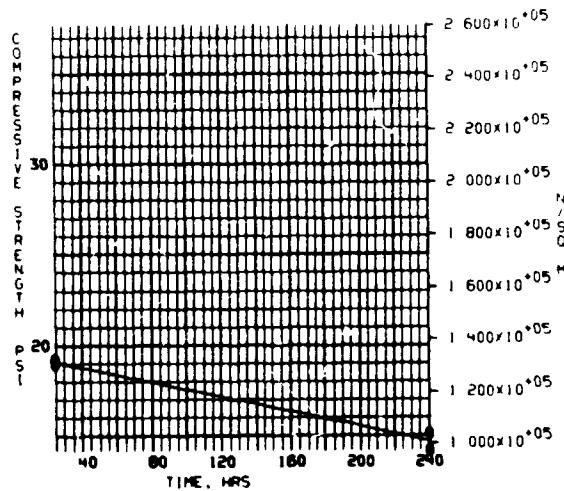
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL POLYURETHANE FOAM BX-250 A

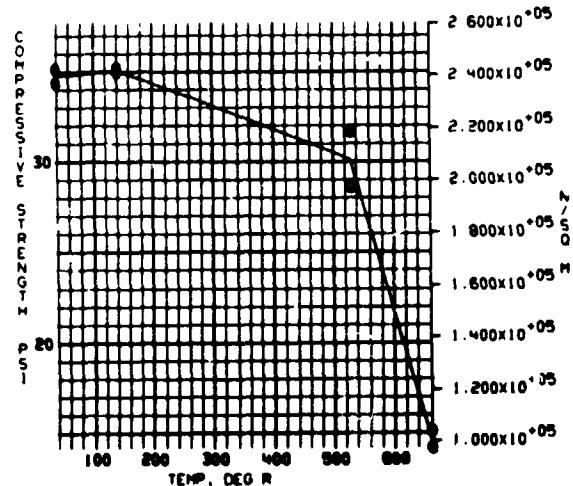


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

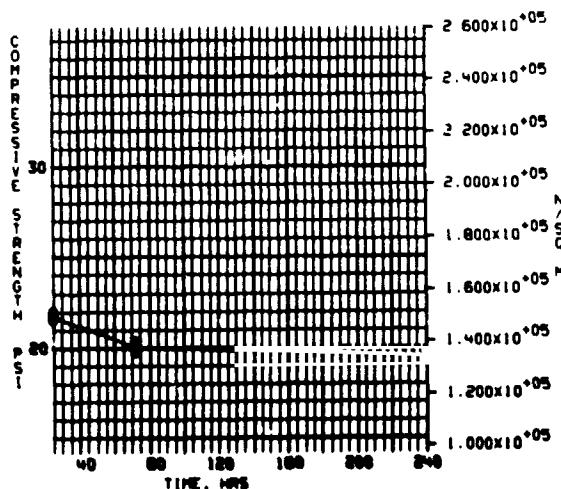
PROPERTY- COMPRESSIVE STRENGTH



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -POLYURETHANE FOAM, BX-250 A
 PROPERTY -COMPRESSIVE STRENGTH

ENVIRONMENT 5	ENVIRONMENT 6
95 PERCENT R.H. 95 DEG F (35 DEG C)	95 PERCENT R.H./SALT AIR 95 DEG F (35 DEG C)

F	HOURS	PSI	N/S M	F	HOURS	PSI	N/SQ M
	12.0	.344+02	.237+06		12.0	.342+02	.236+06
	12.0	.350+02	.241+06		12.0	.333+02	.229+06
	24.0	.335+02	.231+06		24.0	.332+02	.229+06
	24.0	.328+02	.227+06		24.0	.335+02	.231+06
	72.0	.327+02	.225+06		72.0	.332+02	.229+06
	72.0	.326+02	.225+06		72.0	.333+02	.230+06

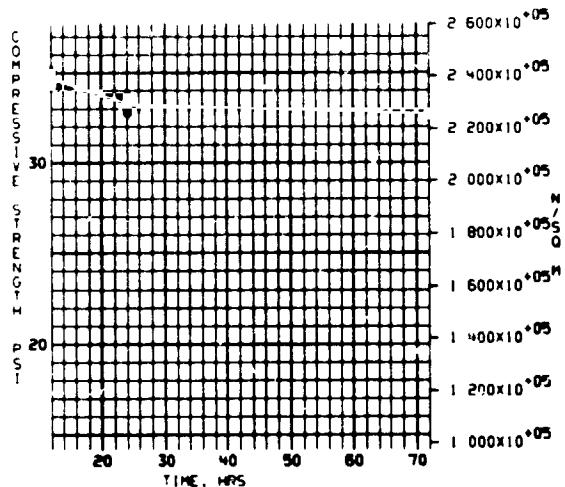
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	HOURS	PSI	N/SQ M	F	DAYS	PSI	N/SQ M
	.5	.354+02	.244+06		4.2	.300+02	.207+06
	.5	.358+02	.247+06		4.2	.302+02	.208+06
	2.0	.377+02	.260+06		150.0	.298+02	.205+06
	2.0	.344+02	.237+06		150.0	.295+02	.203+06
	24.0	.343+02	.236+06				
	24.0	.340+02	.235+06				

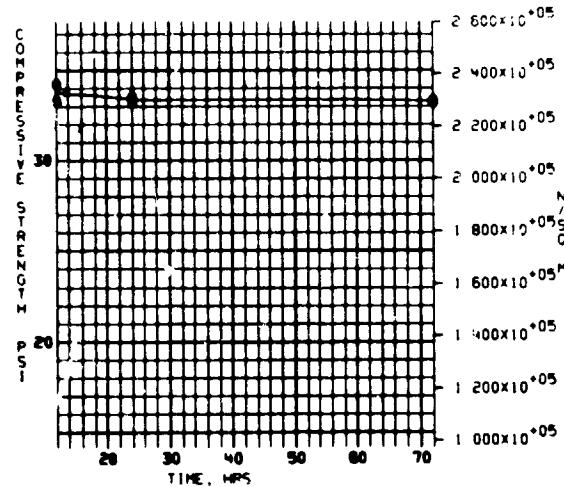
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - POLYURETHANE FOAM, BX 250 A

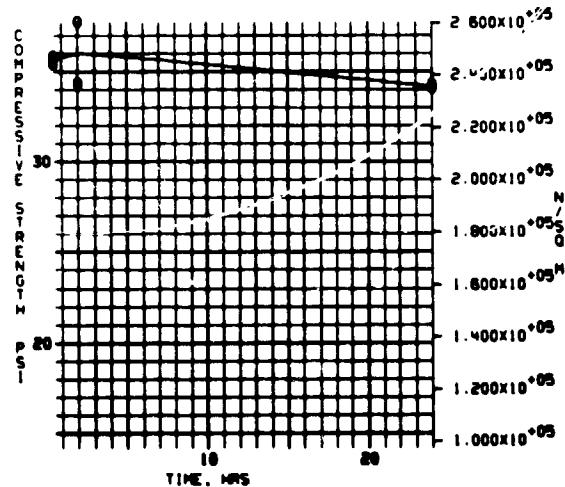


ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

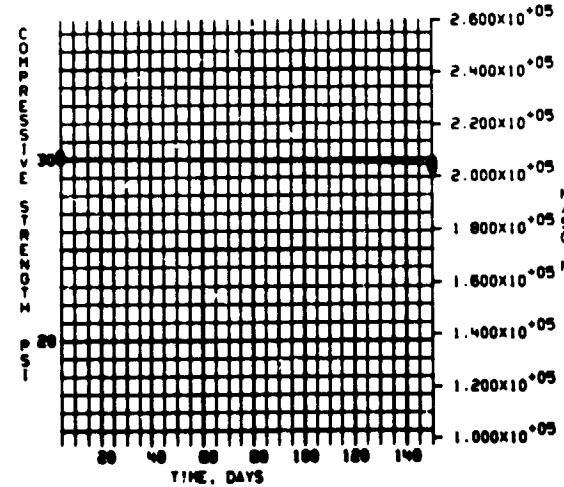
PROPERTY - COMPRESSIVE STRENGTH



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-63 TORR

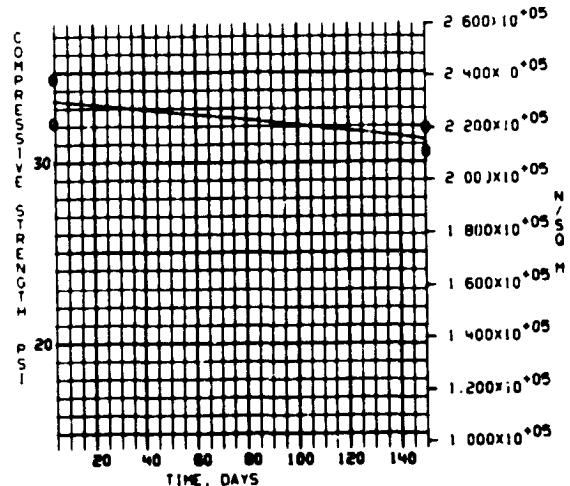
MATERIAL -POLYURETHANE FOAM, BX-250 A
PROPERTY -COMPRESSIVE STRENGTH

ENVIRONMENT B (EF)				ENVIRONMENT B (GH)			
F	UAYS	PSI	N/SQ M	F	F	P.P.	TORR
	4.2	.346+02	.239+06		.100-02		.363+02
	4.2	.322+02	.222+06		.100-02		.357+02
	150.0	.319+02	.220+06		.760+03		SAMPLE DESTROYED
	150.0	.306+02	.211+06		.760+03		SAMPLE DESTROYED

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - POLYURETHANE FOAM, BX-250 A

PROPERTY - COMPRESSIVE STRENGTH



ENVIRONMENT: B(FF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - POLYURETHANE FOAM, BX-250 A

ENVIRONMENT 2B

VACUUM - 10E-06 TORR, 660 DEG.R (365 DEG.K)

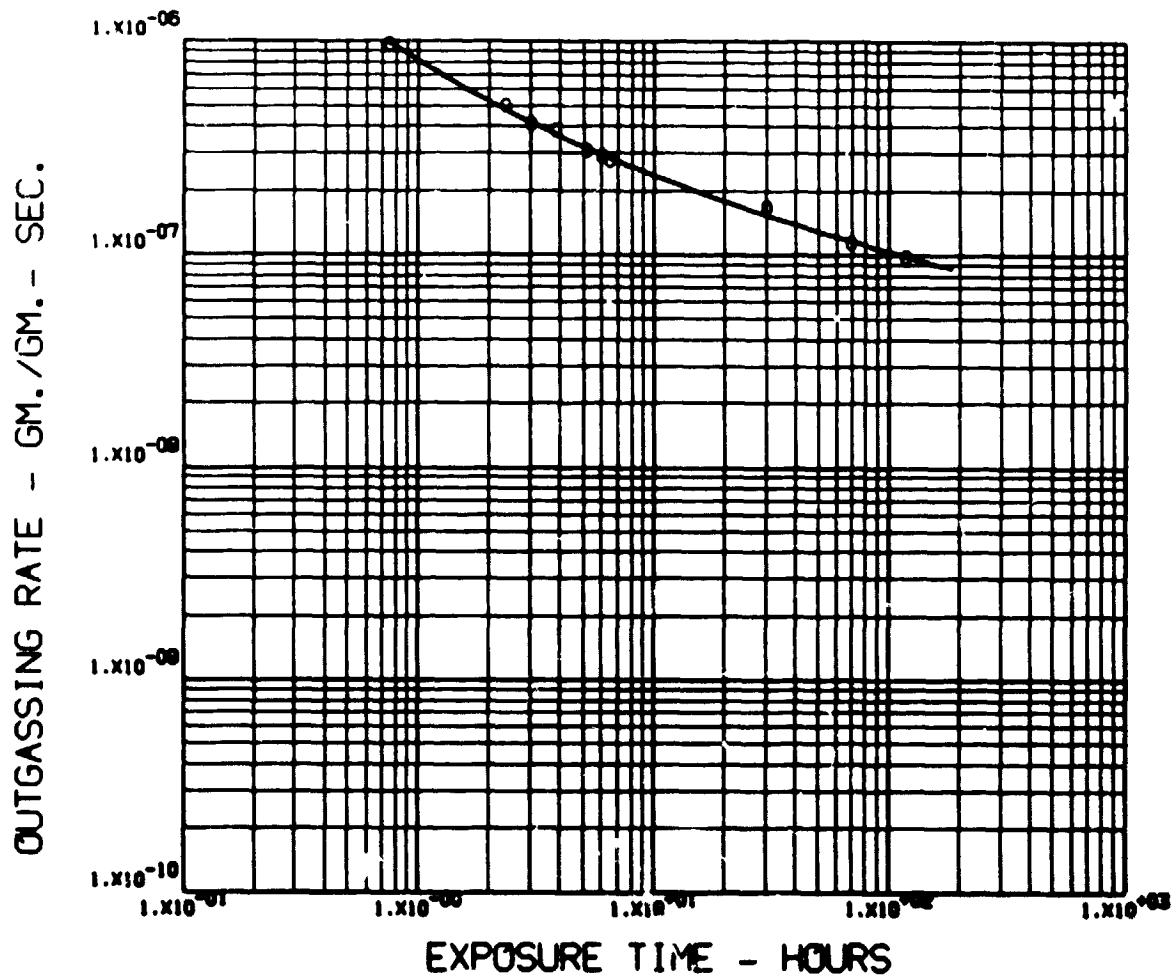
TEST DATE 041671

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .1725 GMS. SAMPLE AREA = 10. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.75	9.62-07	.20	.68	.12
2.34	4.94-07	.22	.54	.24
3.00	4.11-07	.27	.44	.29
3.84	3.76-07	.34	.40	.26
5.17	3.07-07	.35	.38	.27
6.00	2.88-07	.42	.34	.24
6.50	2.75-07	.42	.33	.25
29.84	1.66-07	.64	.17	.19
68.75	1.12-07	.82	.09	.10
117.50	0.72-06	.85	.08	.07

PROPERTY- OUTGASSING
MATERIAL- POLYURETHANE FOAM, BX-250 A



ENVIRONMENT 2B VACUUM. 10-6 TORR. 560 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - POLYURETHANE FOAM, BX-250 A

ENVIRONMENT 2C

VACUUM-1UE-06 TORR, 530 DEG.R (295 DEG.K)

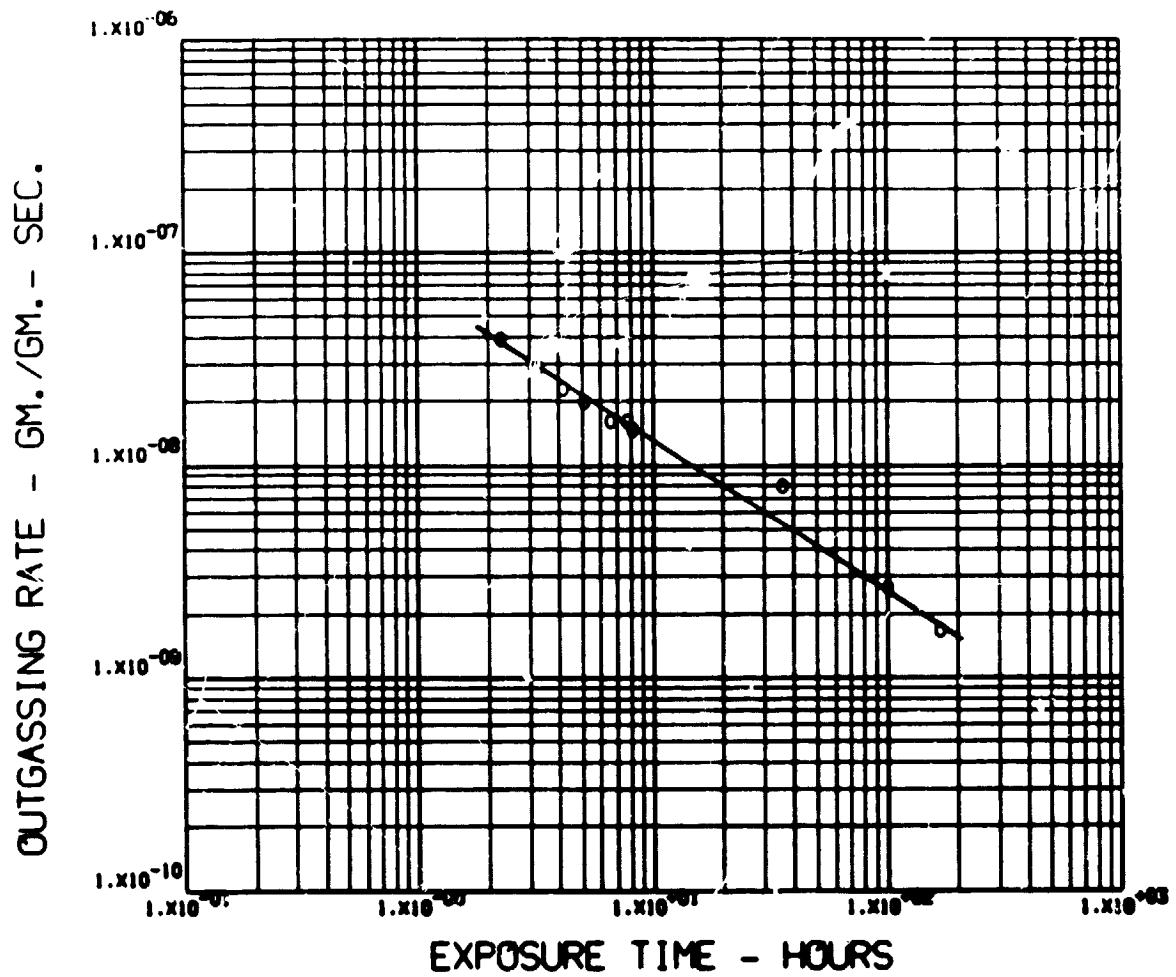
TEST DATE 021771

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 1.1645 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.25	3.85-08	.66	.32	.02
3.25	2.87-08	.51	.44	.05
4.16	2.27-08	.42	.55	.03
5.05	1.98-08	.34	.62	.04
6.60	1.60-08	.24	.71	.05
7.78	1.59-08	.23	.72	.05
8.18	1.45-08	.20	.75	.05
35.91	7.84-09	.08	.90	.03
100.16	2.62-09	.09	.85	.06
167.50	1.64-09	.09	.85	.05

PROPERTY - OUTGASSING
MATERIAL - POLYURETHANE FOAM, BX-250 A



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - POLYURETHANE FOAM, BX-250 A

ENVIRONMENT 4A

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

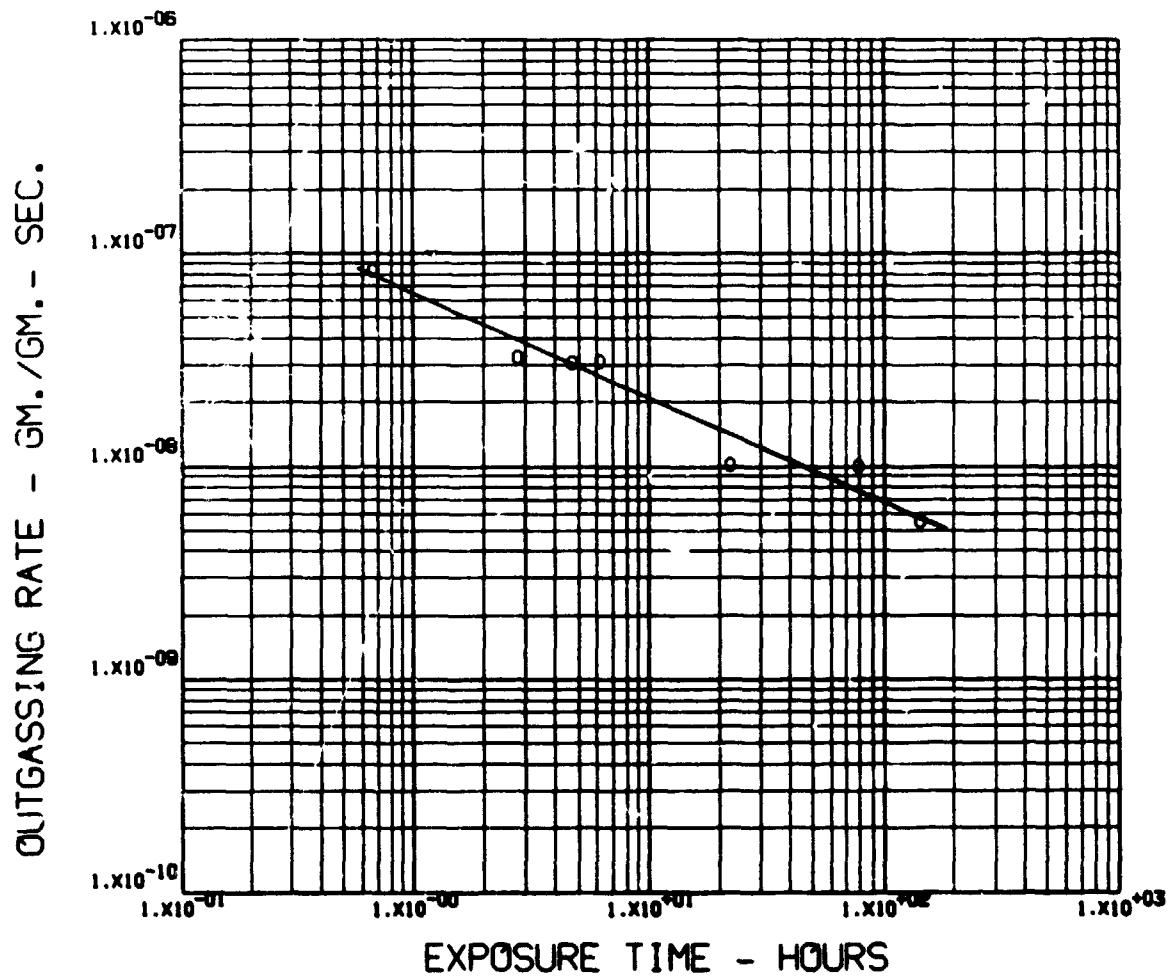
TEST DATE 061472

TEST CHAMBER NO. 3

SAMPLE WEIGHT = .2680 GMS. SAMPLE AREA = 33. 50.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.67	8.18-08	.62	.02	.36
2.75	3.23-08	.51	.10	.40
4.67	3.04-08	.37	.08	.56
6.17	3.08-08	.32	.09	.60
22.00	1.09-08	.32	.00	.67
79.08	9.95-09	.42	.00	.58
141.83	5.43-09	.52	.01	.47

PROPERTY - OUTGASSING
MATERIAL - POLYURETHANE FOAM, BX-250 A



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - POLYURETHANE FOAM, BX-250 A

ENVIRONMENT 4B

VACUUM, 1UE-16 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

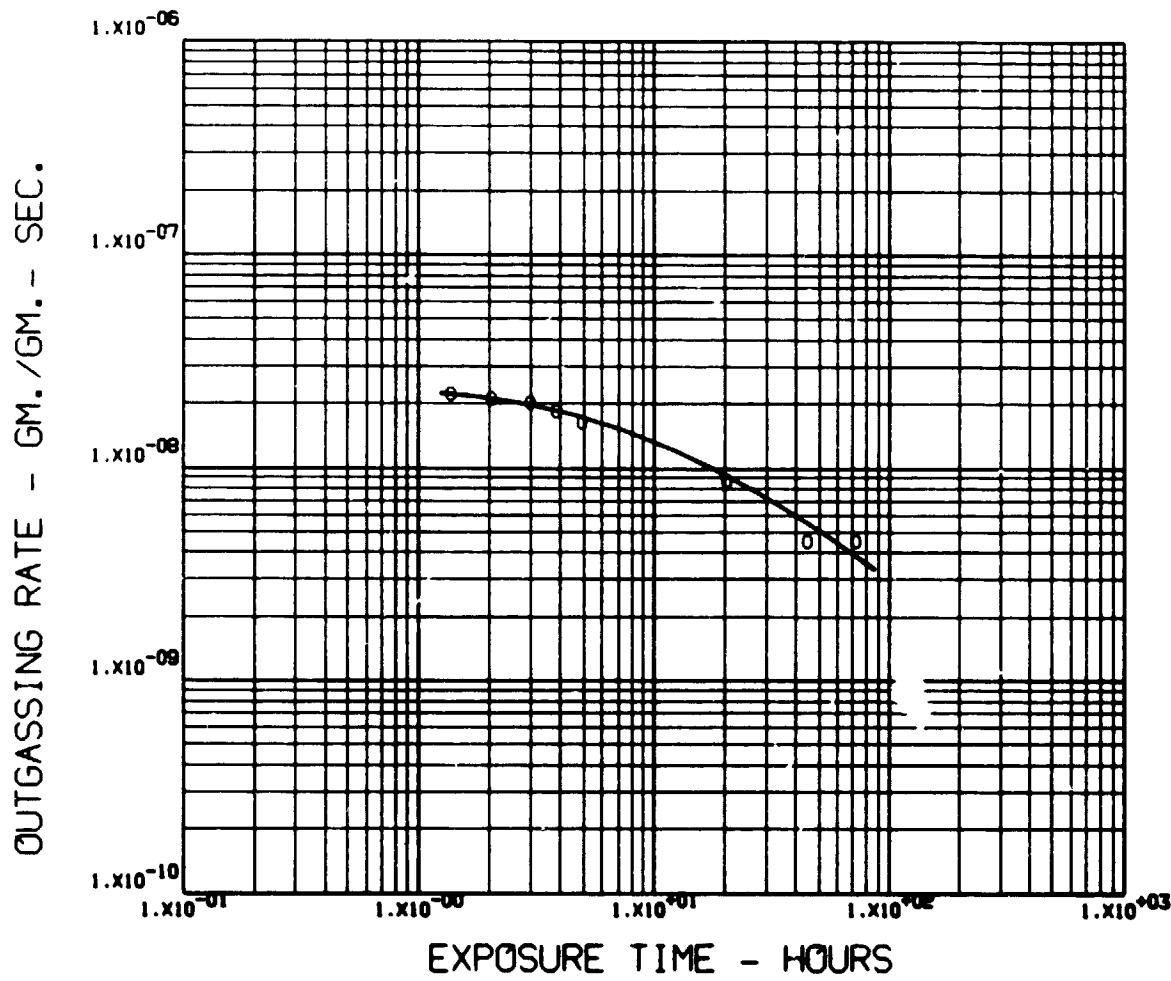
TEST DATE 101871

TEST CHAMBER NO. 1

SAMPLE WEIGHT = .2800 GMS. SAMPLE AREA = 25. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.36	2.21-08	.09	.43	.47
2.03	2.11-08	.09	.43	.47
2.95	2.01-08	.09	.43	.47
3.80	1.83-08	.02	.56	.42
4.86	1.63-08	.02	.56	.42
20.16	8.66-09	.06	.38	.55
44.43	4.49-09	.07	.42	.51
71.28	4.48-09	.07	.42	.51

PROPERTY - OUTGASSING
MATERIAL - POLYURETHANE FOAM, BX-250 A



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR R. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.22200+01
I	10.0	.22210+01
I	.0	.22140+01
I	10.0	.22160+01
I	.0	.22130+01
I	150.0	.22145+01
I	.0	.22150+01
I	150.0	.22170+01

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.22075+01
I	24.0	.22065+01
I	.0	.21933+01
I	24.0	.21940+01
I	.0	.22267+01
I	240.0	.22275+01
I	.0	.22487+01
	240.0	.22497+01

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

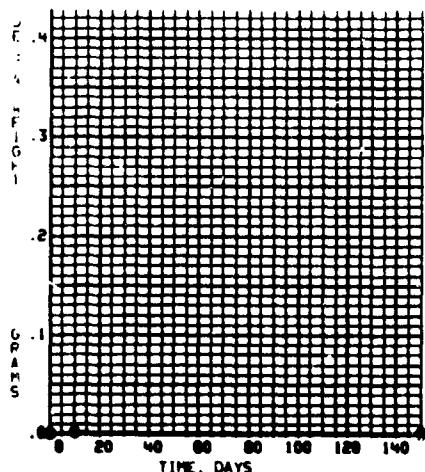
F	DEG R	DEG K	GRAMS
I	-	-	.22267+01
I	660.	367.	.22275+01
I	-	-	.22487+01
I	660.	367.	.22497+01
I	-	-	.22100+01
I	530.	294.	.22115+01
I	-	-	.21920+01
I	530.	294.	.21934+01
I	-	-	.22200+01
I	140.	78.	.22210+01
I	-	-	.22205+01
I	140.	78.	.22215+01
I	-	-	.22240+01
I	37.	21.	.22260+01
I	-	-	.22340+01
I	37.	21.	.22360+01

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.22200+01
I	24.0	.22220+01
I	.0	.22255+01
I	24.0	.22228+01
I	.0	.22255+01
I	72.0	.22270+01
I	.0	.22157+01
I	72.0	.22166+01
I	.0	.22220+01
I	240.0	.22250+01
I	.0	.21980+01
I	240.0	.22010+01

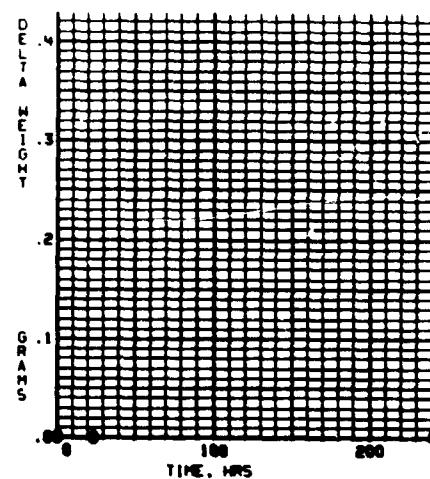
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
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 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

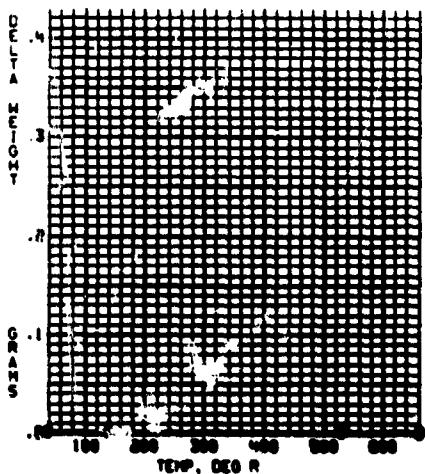


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

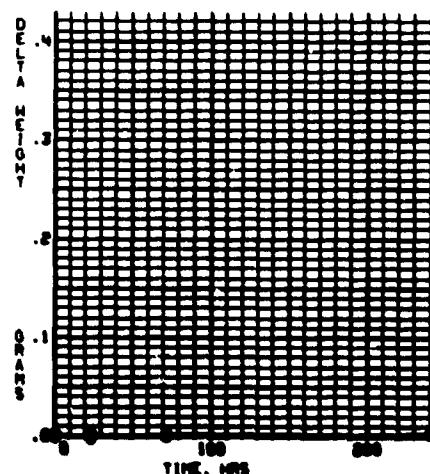
PROPERTY - DELTA HEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.22085+01
	12.0	.22100+01
	.0	.22120+01
	12.0	.22120+01
	.0	.21980+01
	24.0	.21990+01
	.0	.22020+01
	24.0	.22032+01
	.0	.22030+01
	72.0	.22035+01
	.0	.22170+01
	72.0	.22176+01

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.22125+01
	12.0	.22425+01
	.0	.22060+01
	12.0	.22280+01
	.0	.22040+01
	24.0	.22400+01
	.0	.22040+01
	24.0	.22600+01
	.0	.22105+01
	72.0	.22765+01
	.0	.22315+01
	72.0	.26600+01

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

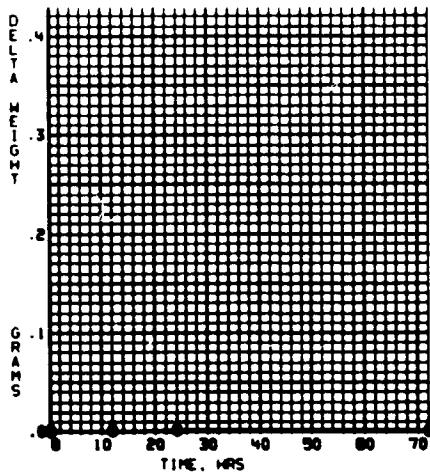
F	HOURS	GRAMS
	.0	.22030+01
	.5	.22010+01
	.0	.22055+01
	.5	.22060+01
	.0	.22080+01
	2.0	.22080+01
	.0	.22175+01
	2.0	.22175+01
	.0	.22165+01
	24.0	.22175+01
	.0	.22115+01
	24.0	.22130+01

ENVIRONMENT 8 (CN)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.22335+01
	4.2	.22345+01
	.0	.22230+01
	4.2	.22245+01
	.0	.22600+01
	150.0	.22650+01
	.0	.22325+01
	150.0	.22375+01

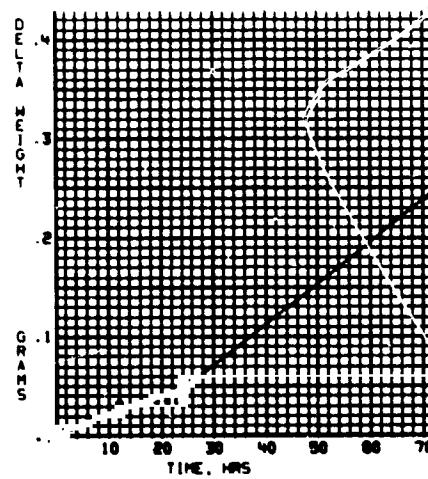
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

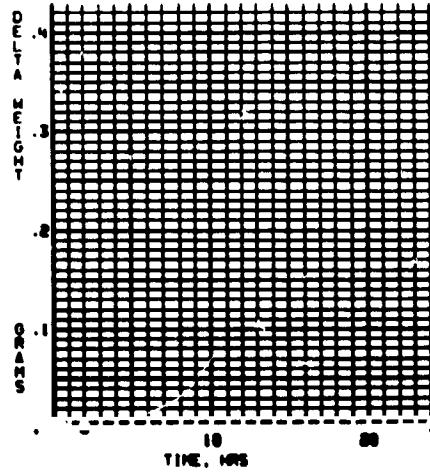


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

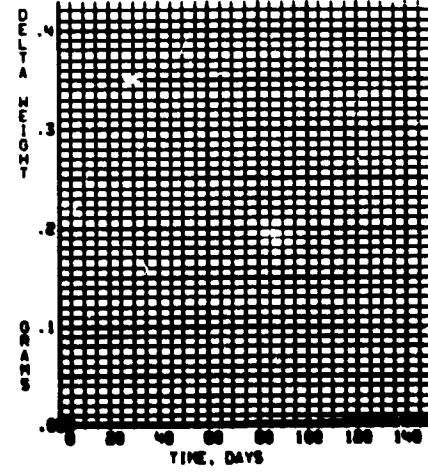
PROPERTY - DELTA WEIGHT



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

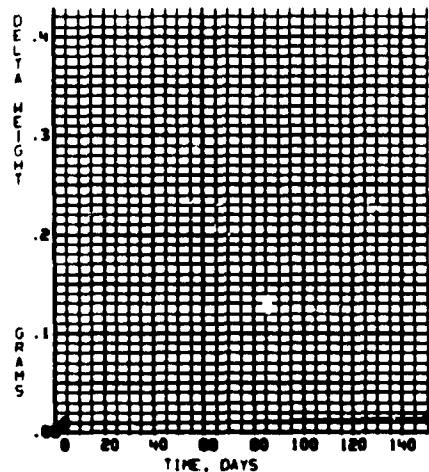
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	DAYS	GRAMS	F	F	P.P. TORR	GRAMS
I	.0	.22460+01	I	.000		.22310+01
I	4.2	.22550+01		.100-02		.22355+01
I	.0	.22310+01	I	.000		.22250+01
I	4.2	.22400+01		.100-02		.22300+01
I	.0	.22215+01	I	.000		.22305+01
	150.0	.22350+01		.760+03	SAMPLE DESTROYED	
I	.0	.22365+01	I	.000		.22190+01
	150.0	.22510+01		.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

PROPERTY - DELTA HEIGHT



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

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MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -TENSILE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	PSI	N/SQ M
.0		.120+02	.828+05
.0		.120+02	.828+05
10.0		.750+01	.517+05
10.0		.102+02	.704+05
150.0		.760+01	.524+05
150.0		.820+01	.566+05

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	PSI	N/SQ M
	24.0	.108+02	.745+05
	24.0	.660+01	.455+05
	240.0	.920+01	.635+05
	240.0	.970+01	.669+05

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

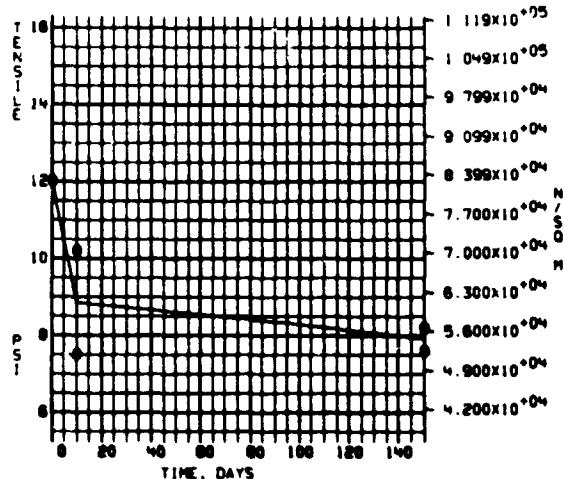
F	DEG R	DEG K	PSI	N/SQ M
660.	367.		.920+01	.635+05
660.	367.		.970+01	.669+05
530.	294.		.780+01	.538+05
530.	294.		.830+01	.573+05
140.	78.		.100+02	.690+05
140.	78.		.120+02	.828+05
37.	21.		.138+02	.952+05
37.	21.		.720+01	.497+05

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	PSI	N/SQ M
	24.0	.900+01	.621+05
	24.0	.102+02	.704+05
	72.0	.760+01	.524+05
	72.0	.122+02	.842+05
	240.0	.142+02	.980+05
	240.0	.163+02	.112+06

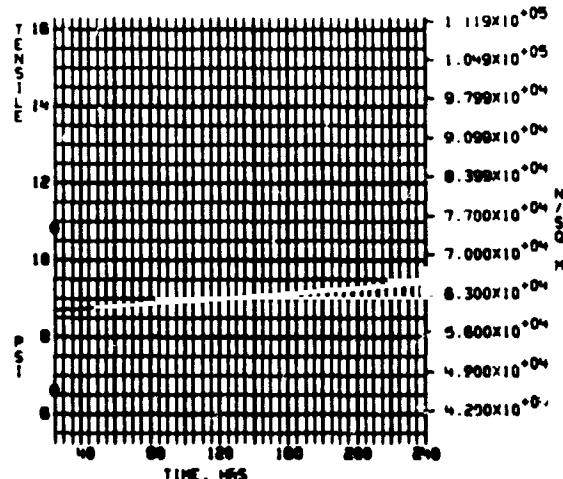
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
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 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

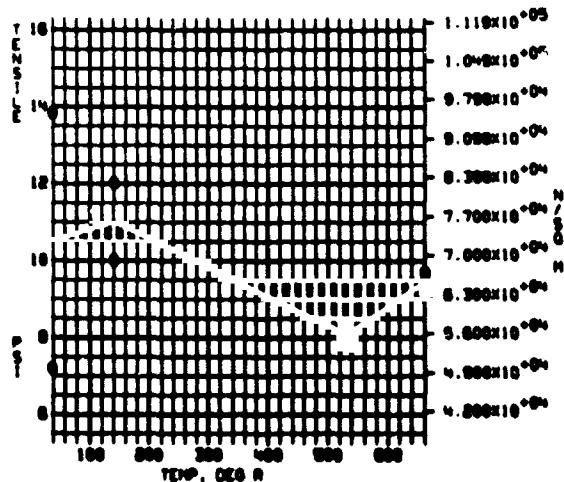


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

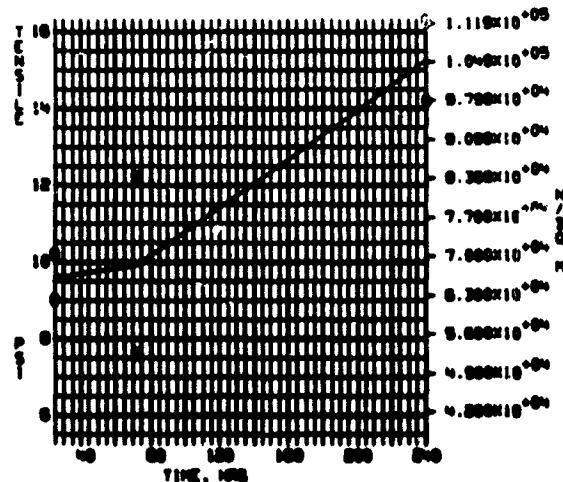
PROPERTY - TENSILE



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 300 DEG F
(160 DEG C) 40 PERCENT R.H.

MATERIAL - VELCRO FASTENERS, MPE-12-1-100
 PROPERTY - TENSILE

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	PSI	N/SQ M	F	HOURS	PSI	N/SQ M
	12.0	.520+01	.359+05		12.0	.980+01	.676+05
	12.0	.100+02	.690+05		12.0	.108+02	.745+05
	24.0	.800+01	.552+05		24.0	.133+02	.917+05
	24.0	.112+02	.773+05		24.0	.850+01	.586+05
	72.0	.890+01	.614+05		72.0	.110+02	.759+05
	72.0	.880+01	.607+05		72.0	.136+02	.938+05

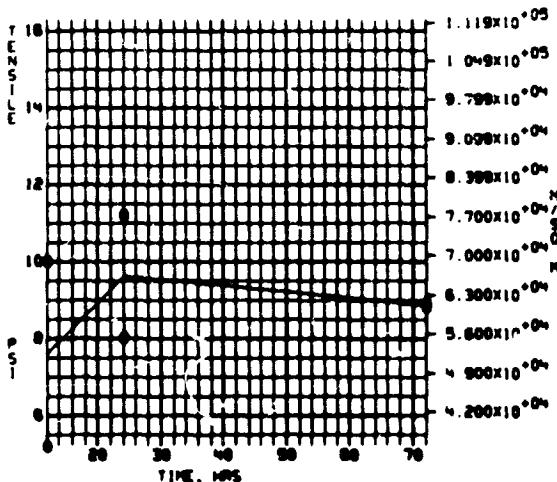
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	HOURS	PSI	N/SQ M	F	DAYS	PSI	N/SQ M
	.5	.820+01	.566+05		4.2	.960+01	.662+05
	.5	.820+01	.566+05		4.2	.840+01	.579+05
	2.0	.130+02	.897+05		150.0	.920+01	.635+05
	2.0	.920+01	.635+05		150.0	.800+01	.552+05
	24.0	.115+02	.793+05				
	24.0	.127+02	.876+05				

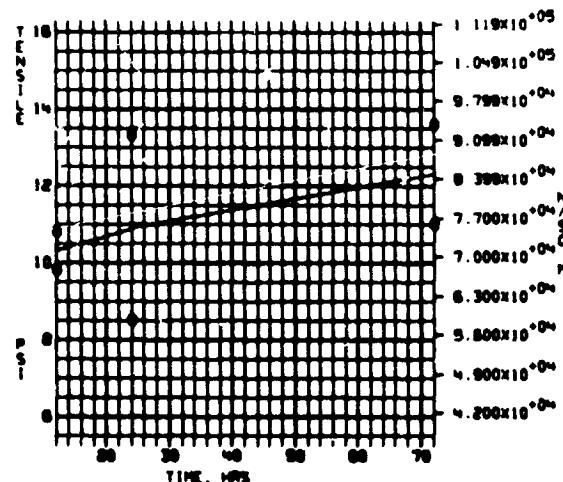
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- VELCRO FASTENERS, MPE-12-1-100

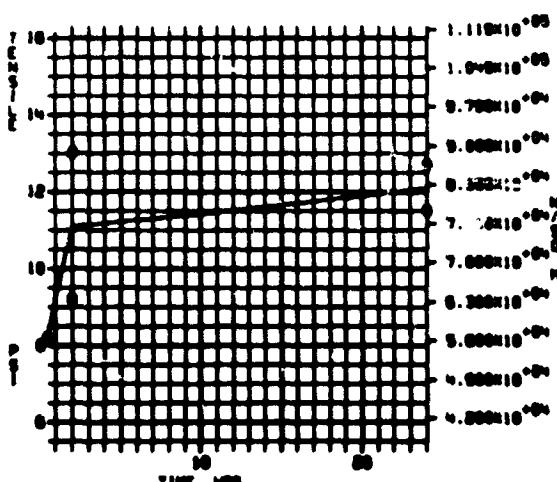


ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

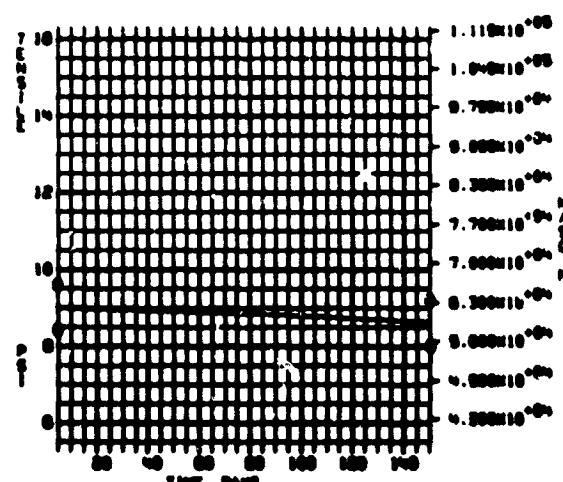
PROPERTY- TENSILE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8
SHOCK TEST, 70 DEG F
(21 DEG C) 1.5-03 TENS

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
 GASFOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

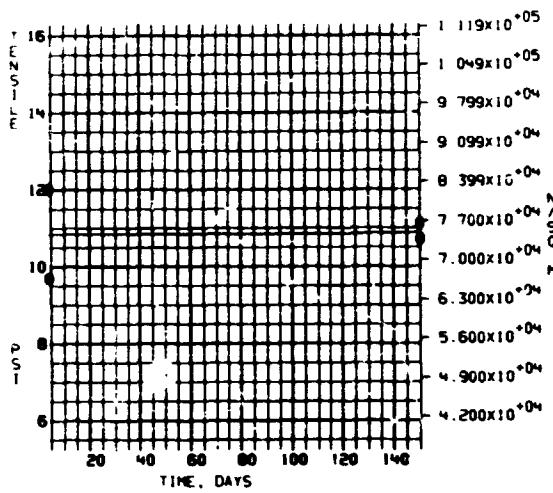
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINF
 MIXTURE AT 95 DEG F(35 DEG C)+4 HR

F	UAYS	PSI	N/SQ M	F	F	P.P.	TORR	PSI	N/SQ M
	4.2	.970+01	.669+05			.100-02		.820+01	.566+05
	4.2	.120+02	.828+05			.100-02		.123+02	.848+05
	150.0	.107+02	.738+05			.760+03		SAMPLE DESTROYED	
	150.0	.111+02	.766+05			.760+03		SAMPL. DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- VELCRO FASTENERS, MPE-12-1-100

PROPERTY- TENSILE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

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MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -SHEAR

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	PSI	N/SQ M
	.0	.262+02	.181+06
	.0	.290+02	.200+06
	10.0	.260+02	.179+06
	10.0	.230+02	.159+06
	150.0	.162+02	.112+06
	150.0	.215+02	.148+06

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	PSI	N/SQ M
	24.0	.174+02	.120+06
	24.0	.198+02	.137+06
	240.0	.211+02	.146+06
	240.0	.271+02	.187+06

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

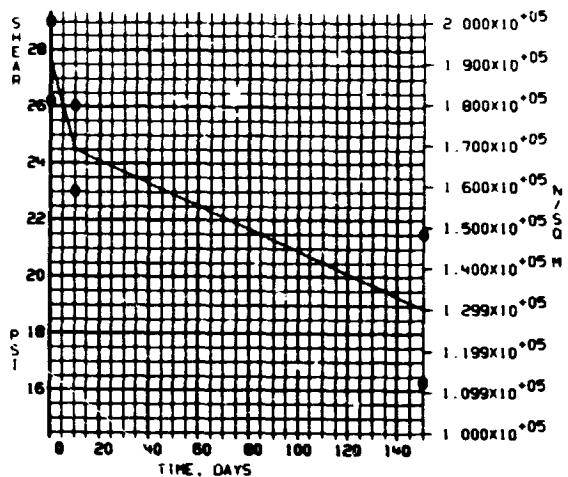
F	DEG R	DEG K	PSI	N/SQ M
660.	367.		.211+02	.146+06
660.	367.		.271+02	.187+06
530.	294.		.245+02	.169+06
530.	294.		.192+02	.133+06
140.	78.		.245+02	.169+06
140.	78.		.260+02	.179+06
37.	21.		.192+02	.133+06
37.	21.		.247+02	.171+06

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	PSI	N/SQ M
	24.0	.182+02	.126+06
	24.0	.202+02	.140+06
	72.0	.262+02	.181+06
	72.0	.192+02	.133+06
	240.0	.250+02	.172+06
	240.0	.220+02	.152+06

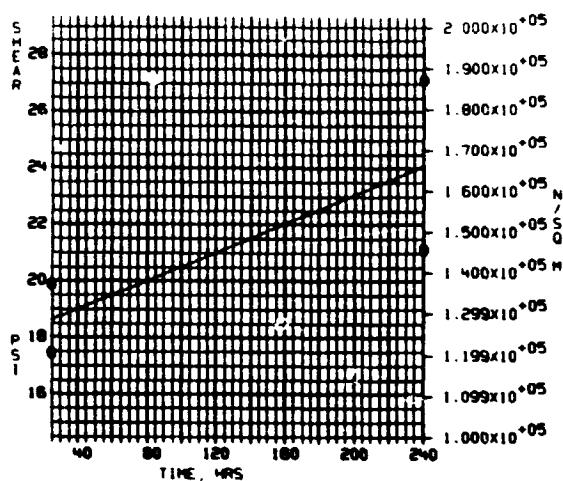
NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, HPE-12-1-100

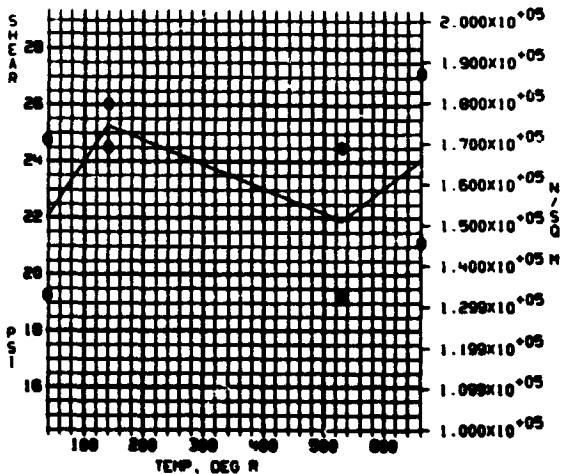


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

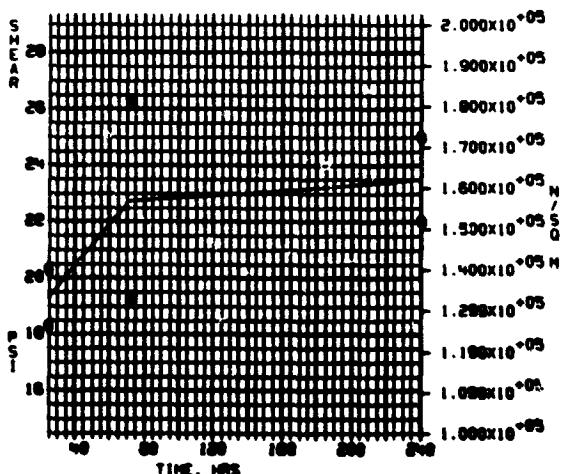
PROPERTY - SHEAR



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

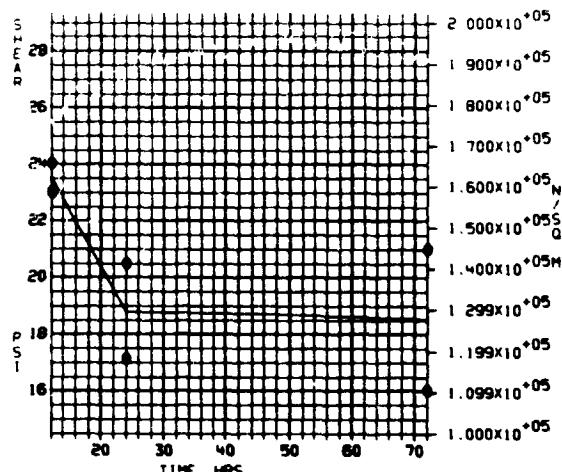
MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -SHEAR

ENVIRONMENT 5			ENVIRONMENT 6		
95 PERCENT R.H. 95 DEG F (35 DEG C)			95 PERCENT R.H./SALT AIR 95 DEG F (35 DEG C)		
F	HOURS	PSI	F	HOURS	PSI
	12.0	.230+02		12.0	.195+02
	12.0	.240+02		12.0	.200+02
	24.0	.205+02		24.0	.185+02
	24.0	.171+02		24.0	.227+02
	72.0	.160+02		72.0	.175+02
	72.0	.210+02		72.0	.262+02
		.145+06			.135+06
					.138+06
					.128+06
					.151+05
					.121+06
					.181+06

ENVIRONMENT 7			ENVIRONMENT 8 (CD)		
WATER IMMERSION AT 70 DEG F (21 DEG C)			GASEOUS OXYGEN, 70 DEG F (21 DEG C) 1.E-03 TORR		
F	HOURS	PSI	F	DAYS	PSI
	.5	.232+02		4.2	.270+02
	.5	.237+02		4.2	.280+02
	2.0	.160+02		150.0	.230+02
	2.0	.242+02		150.0	.142+02
	24.0	.179+02			.186+06
	24.0	.186+02			.193+06
		.123+06			.159+06
					.983+05

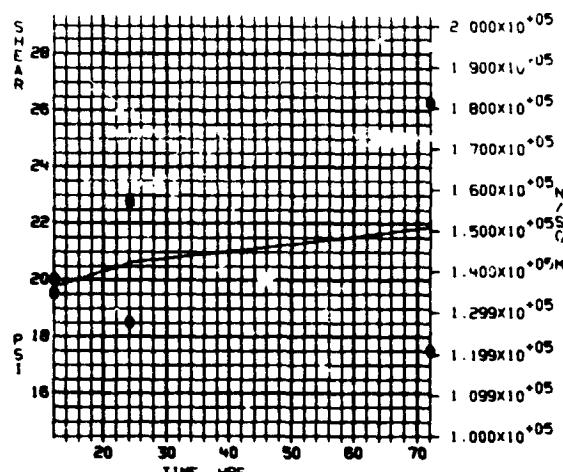
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

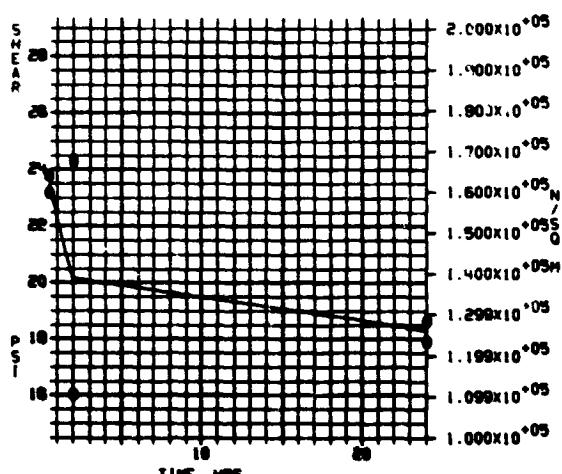


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

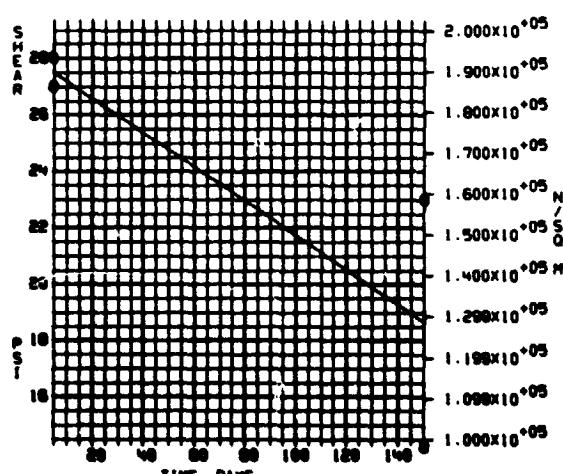
PROPERTY - SHEAR



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORN

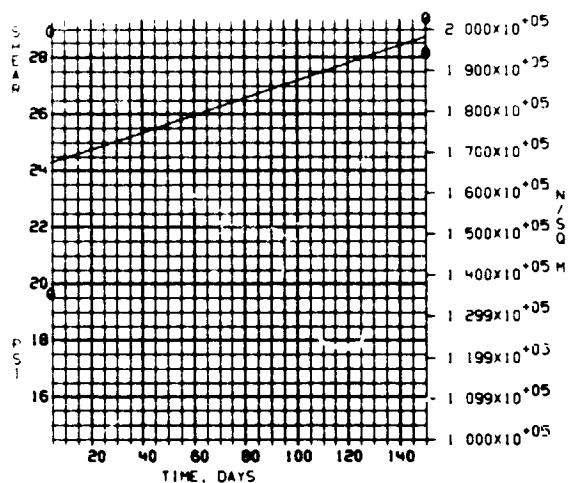
MATERIAL - VELCPO FASTENERS, HPE-12-1-100
 PROPERTY - SHEAR

ENVIRONMENT 8 (EF)			ENVIRONMENT 8 (GH)				
GASEOUS FLUORINE, 70 DEG F (21 DEG C) 1.E-03 TORR			95 PERCENT R.H. AIR/FLUORINE MIXTURE AT 95 DEG F(35 DEG C), 4 HR				
F	DAYS	PSI	N/SQ M	F	P.P. TORR	PSI	N/SQ M
4.2		.197+02	.136+06		.100-02	.260+02	.180+06
4.2		.289+02	.199+06		.100-02	.168+02	.116+06
150.0		.282+02	.194+06		.760+03		SAMPLE DESTROYED
150.0		.293+02	.202+06		.760+03		SAMPLE DESTROYED

NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 • ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 4 PERCENT
 • THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 • THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, HFE-12-1-100

PROPERTY - SHEAR



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -PEFL

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	LB/IN	N/M
	.0	.104+02	.182+04
	.0	.154+02	.270+04
	10.0	.230+02	.403+04
	10.0	.136+02	.238+04
	150.0	.138+02	.242+04
	150.0	.138+02	.242+04

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.115+02	.201+04
	24.0	.125+02	.219+04
	240.0	.169+02	.296+04
	240.0	.140+02	.245+04

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

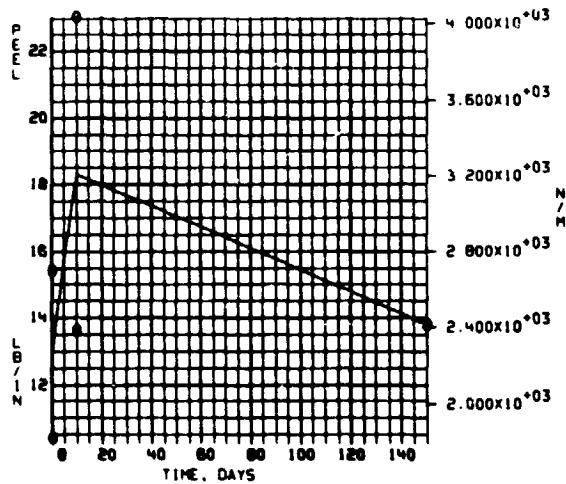
F	DEG R	DEG K	LB/IN	N/M
660.	367.		.169+02	.296+04
660.	367.		.140+02	.245+04
530.	294.		.172+02	.301+04
530.	294.		.132+02	.231+04
140.	78.		.130+02	.228+04
140.	78.		.102+02	.179+04
37.	21.		.137+02	.240+04
37.	21.		.140+02	.245+04

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	LB/IN	N/M
	24.0	.112+02	.196+04
	24.0	.133+02	.233+04
	72.0	.130+02	.228+04
	72.0	.135+02	.237+04
	240.0	.172+02	.301+04
	240.0	.172+02	.301+04

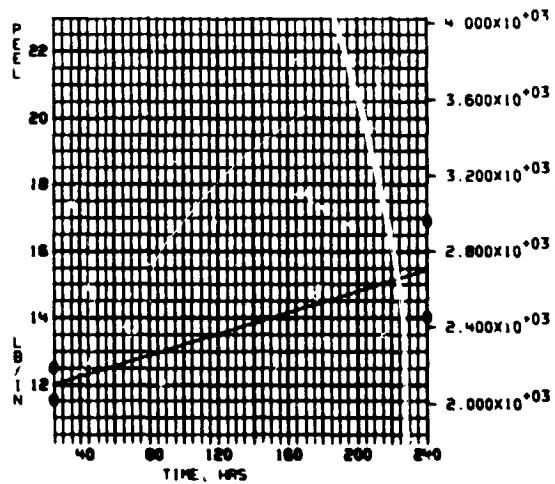
NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

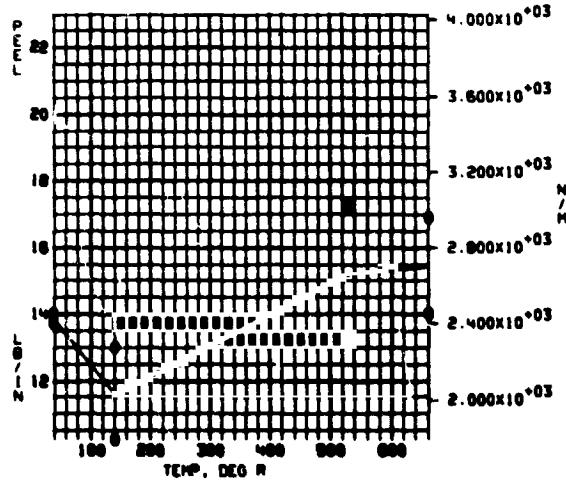


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

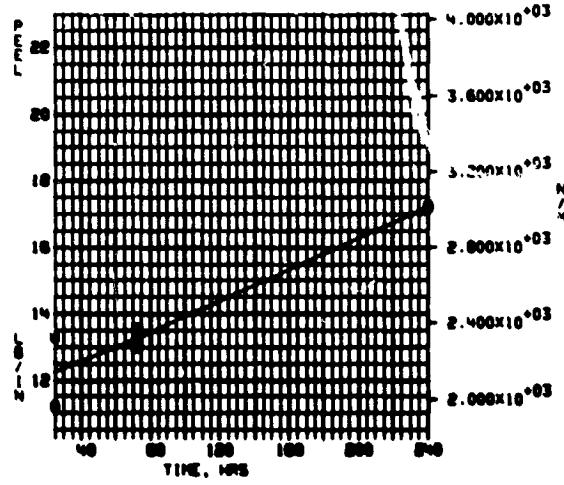
PROPERTY - PEEL



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -PEEL

ENVIRONMENT 5
 95 PERCENT R.H., 95 DEG F
 (35 DEG C)

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M	F	HOURS	LB/IN	N/M
	12.0	.106+02	.186+04		12.0	.135+02	.237+04
	12.0	.140+02	.245+04		12.0	.115+02	.201+04
	24.0	.142+02	.249+04		24.0	.127+02	.223+04
	24.0	.122+02	.214+04		24.0	.138+02	.242+04
	72.0	.160+02	.280+04		72.0	.205+02	.359+04
	72.0	.160+02	.280+04		72.0	.117+02	.205+04

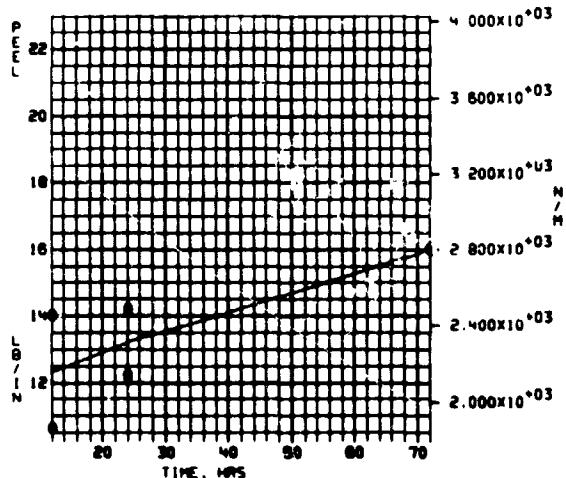
ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	HOURS	LB/IN	N/M	F	DAYS	LB/IN	N/M
	.5	.120+02	.210+04		4.2	.134+02	.235+04
	.5	.138+02	.242+04		4.2	.145+02	.254+04
	2.0	.131+02	.230+04		150.0	.150+02	.263+04
	2.0	.125+02	.219+04		150.0	.145+02	.254+04
	24.0	.185+02	.324+04				
	24.0	.119+02	.209+04				

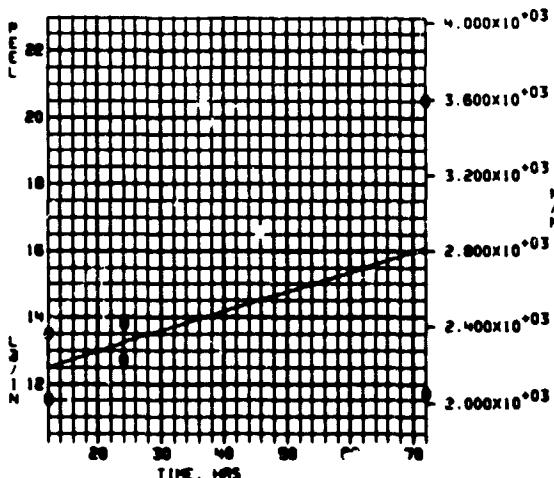
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-1-100

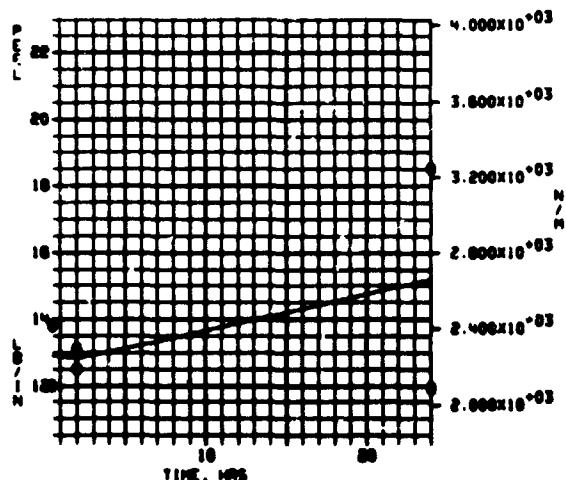


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

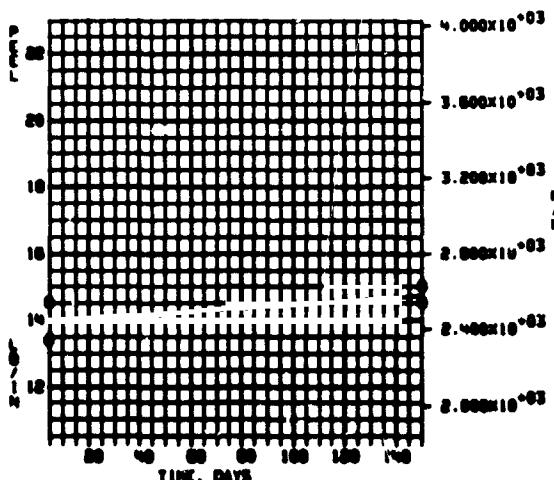
PROPERTY - PEEL



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.5-43 TORR

MATERIAL -VELCRO FASTENERS, HPE-12-1-100
 PROPERTY -PEEL

ENVIRONMENT 8 (EF)
 GASFOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

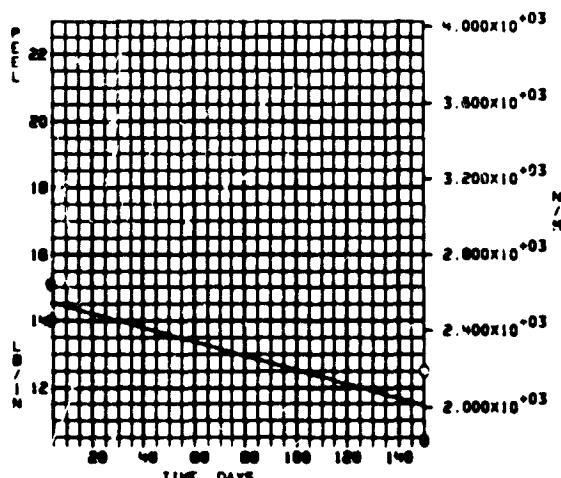
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	DAYS	LB/IN	N/M	F	F	P.P. TORR	LB/IN	N/M
	4.2	.140+02	.245+04		.100-02		.140+02	.245+04
	4.2	.151+02	.265+04		.100-02		.123+02	.216+04
150.0		.104+02	.182+04		.760+03		SAMPLE DESTROYED	
150.0		.125+02	.219+04		.760+03		SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - VELCRO FASTENERS, MPE-12-I-100

PROPERTY - PEEL



ENVIRONMENT: G(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = VELCRO FASTENERS, HPE-12-1-100

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DEG.R (365 DEG.K)

TEST DATE 041371

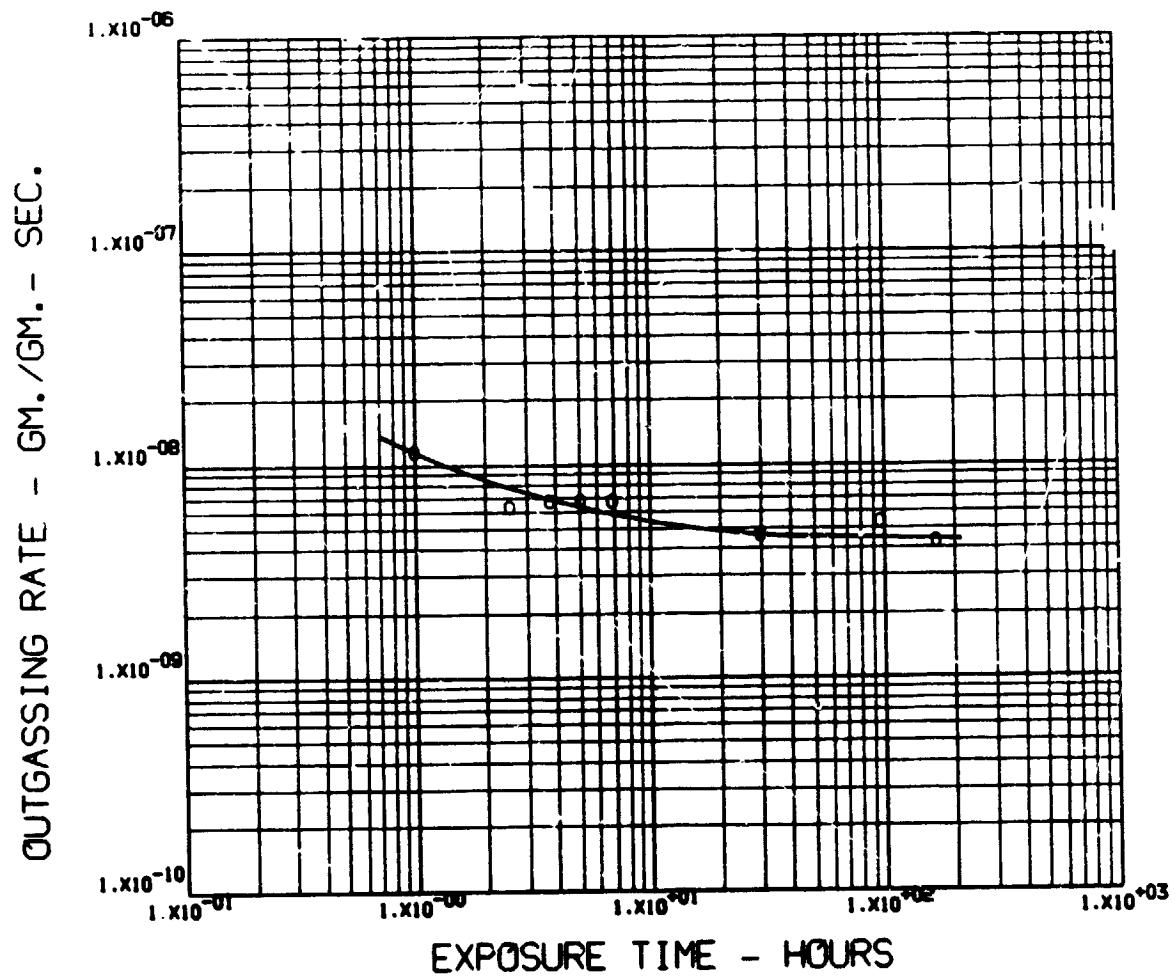
TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.6830 GMS. SAMPLE AREA = 77. 50.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.98	1.14-08	.46	.36	.19
2.52	6.24-09	.87	.10	.04
3.70	6.67-09	.49	.27	.24
5.03	6.68-09	.48	.26	.26
6.87	6.65-09	.38	.36	.26
29.70	4.60-07	.34	.33	.33
94.95	5.33-09	.57	.18	.24
165.58	4.25-09	.75	.13	.12

PROPERTY - OUTGASSING

MATERIAL - VELCRO FASTENERS, HPE-12-1-100



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

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PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = VELCRO FASTENERS. HPE-12-1-100

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

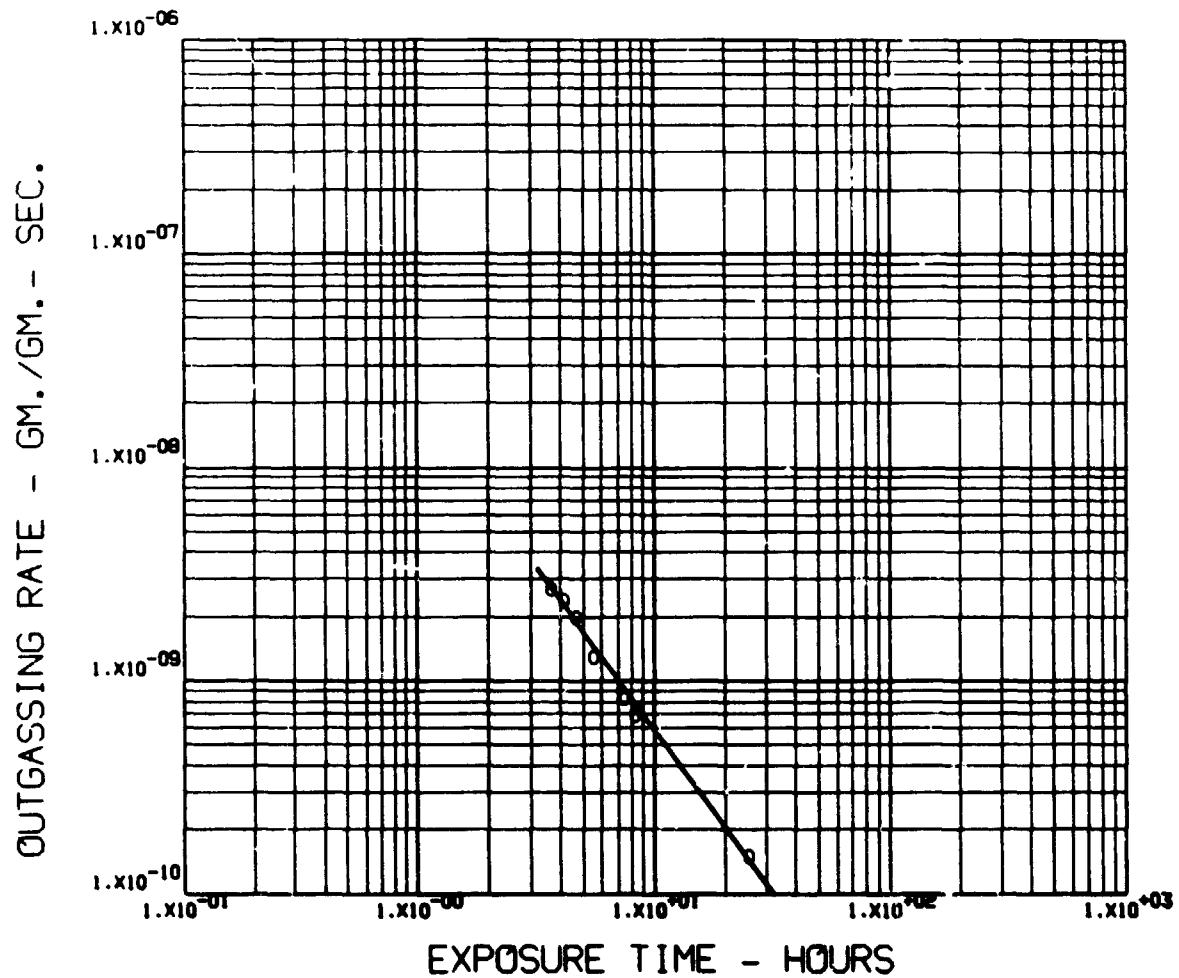
TEST DATE 021871

TEST CHAMBER NO. 4

SAMPLE WEIGHT = 6.6350 GMS. SAMPLE AREA = 310. SG.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
3.60	2.65-09	.67	.28	.04
4.10	2.37-09	.69	.26	.05
4.60	1.96-09	.69	.25	.06
5.52	1.27-09	.72	.21	.06
7.43	8.15-10	.64	.29	.07
8.22	5.87-10	.58	.35	.08
25.10	1.48-10	.35	.55	.10
110.30	8.79-11	.31	.62	.07
167.63	5.91-11	.30	.63	.07

PROPERTY - OUTGASSING
MATERIAL - VELCRO FASTENERS, HPE-12-1-100



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - VELCRO FASTENERS, HPE-12-1-100

ENVIRONMENT 4A

VACUUM, 1.1E-06 TORR, 660 DEG.R. (366 DEG.K) FOR 6HRS, FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R. (294 DEG.K), FCP 4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R. (294 DEG.K)

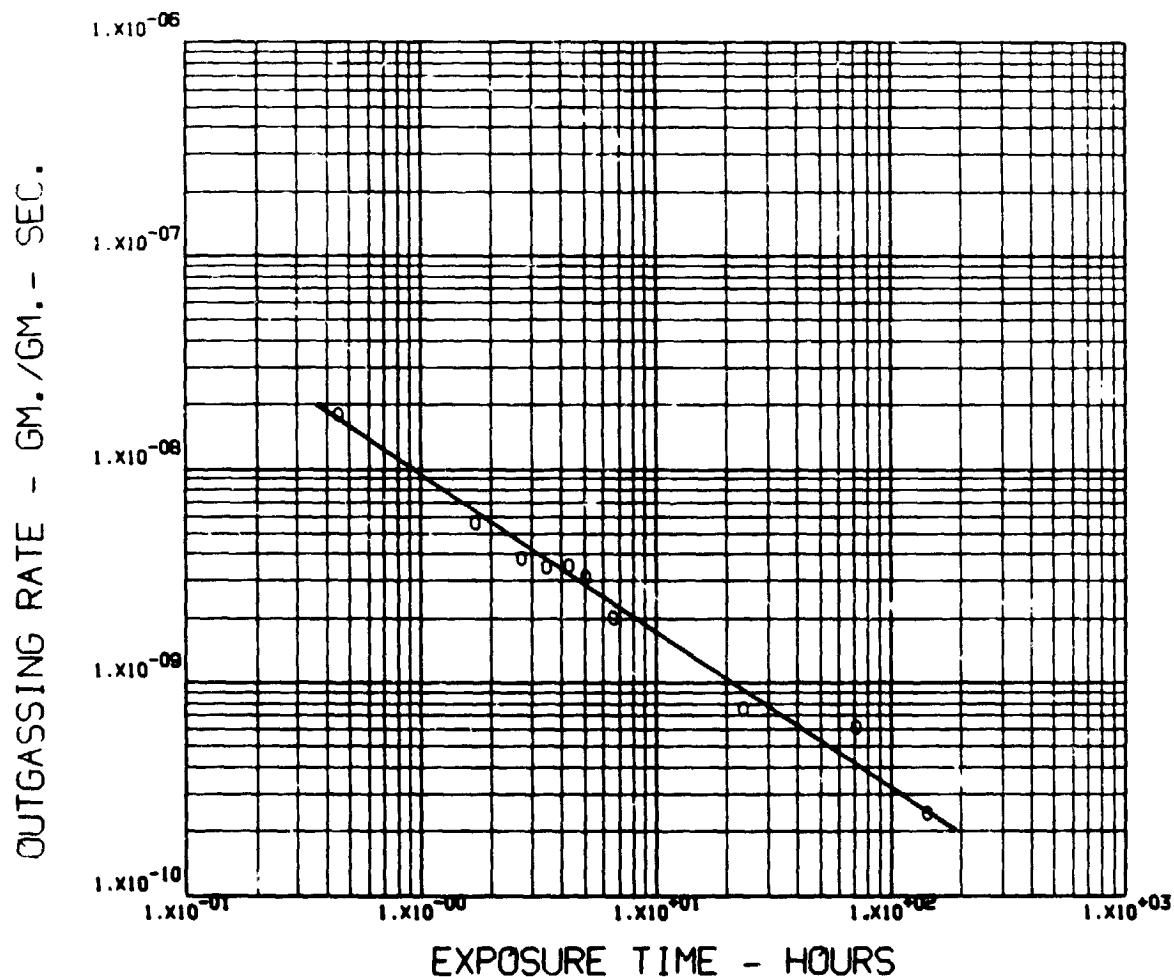
TEST DATE 061572

TEST CHAMRFR NO. 4

SAMPLE WEIGHT = 6.6300 GMS. SAMPLE AREA = 304. 50.CM².

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.45	1.77-08	.74	.23	.03
1.70	5.54-09	.02	.98	.00
2.70	3.80-09	.04	.96	.00
3.45	3.46-09	.07	.91	.01
4.28	3.49-09	.07	.92	.01
5.03	3.12-09	.10	.89	.01
6.53	2.00-09	.23	.72	.04
23.53	7.53-10	.22	.74	.04
70.36	6.11-10	.36	.64	.00
143.28	2.42-10	.37	.63	.00

PROPERTY - OUTGASSING
MATERIAL - VELCRO FASTENERS, HPE-12-1-100



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.
) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR.
530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSI
NG TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - VELCRO FASTENERS, HPE-12-1-100

ENVIRONMENT 4B

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

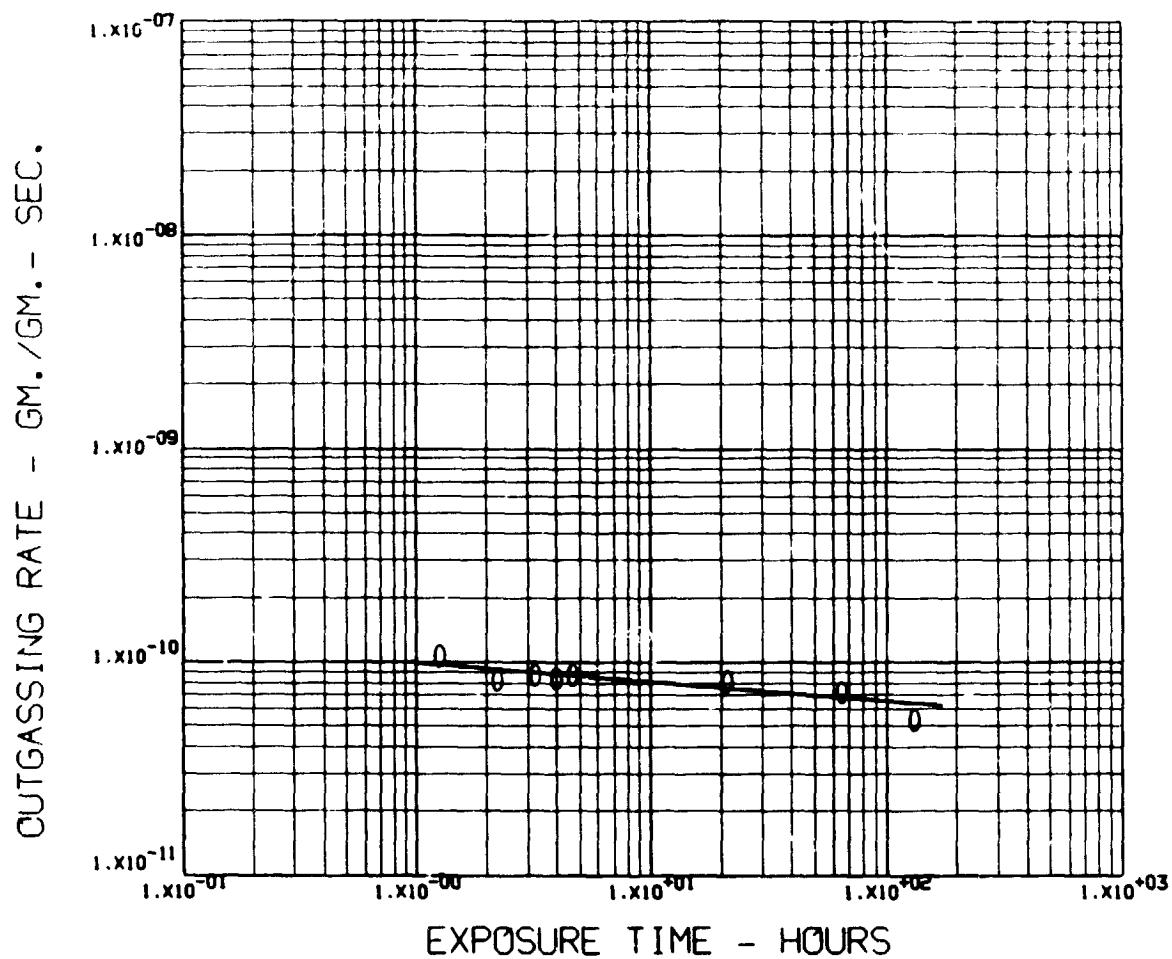
TEST DATE 051771

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 5.3580 GMS. SAMPLE AREA = 303. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.25	1.07-10	.71	.29	.00
2.25	8.54-11	.61	.37	.02
3.25	8.66-11	.55	.42	.03
4.00	8.85-11	.45	.51	.04
4.83	8.73-11	.52	.44	.04
20.75	8.07-11	.43	.49	.08
69.00	7.36-11	.31	.62	.07
140.58	5.17-11	.36	.58	.06

PROPERTY- OUTGASSING
MATERIAL- VELCRO FASTENERS, HPE-12-1-100



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR R. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL -TEFLON FILM, TFE
PROPERTY -WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.16207+02
I	10.0	.16201+02
I	.0	.16224+02
I	10.0	.16223+02
I	.0	.16301+02
I	150.0	.16260+02
I	.0	.16169+02
I	150.0	.16146+02

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.16220+02
I	24.0	.16230+02
I	.0	.16339+02
I	24.0	.16310+02
I	.0	.16341+02
I	240.0	.16227+02
I	.0	.16237+02
	240.0	.16218+02

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

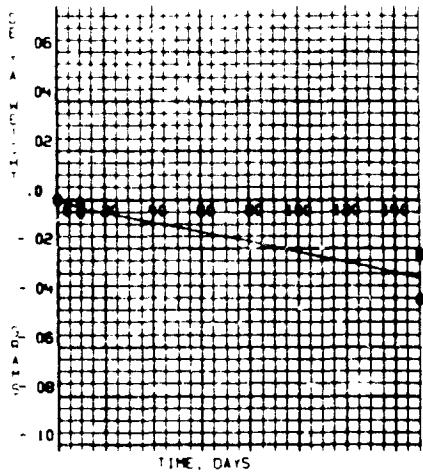
F	DEG R	DEG K	GRAMS
I	-	-	.16341+02
I	660.	367.	.16238+02
I	-	-	.16237+02
I	660.	367.	.16218+02
I	-	-	.16246+02
I	530.	294.	.16208+02
I	-	-	.16247+02
I	530.	294.	.16232+02
I	-	-	.16128+02
I	140.	78.	.16090+02
I	-	-	.16210+02
I	140.	78.	.16199+02
I	-	-	.16454+02
I	37.	21.	.16424+02
I	-	-	.16310+02
I	37.	21.	.16296+02

ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.16346+02
I	24.0	.16306+02
I	.0	.16319+02
I	24.0	.16232+02
I	.0	.16358+02
I	72.0	.16283+02
I	.0	.16351+02
I	72.0	.16291+02
I	.0	.16391+02
I	240.0	.16318+02
I	.0	.16204+02
I	240.0	.16164+02

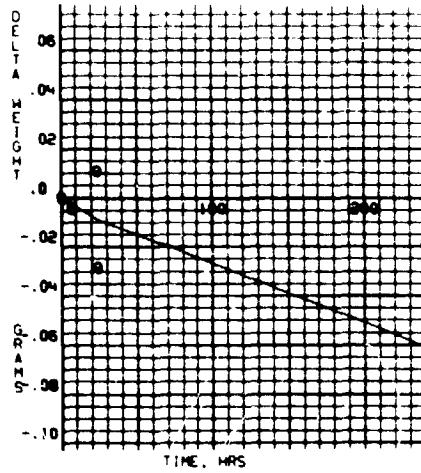
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MALE A 100% RH TEST

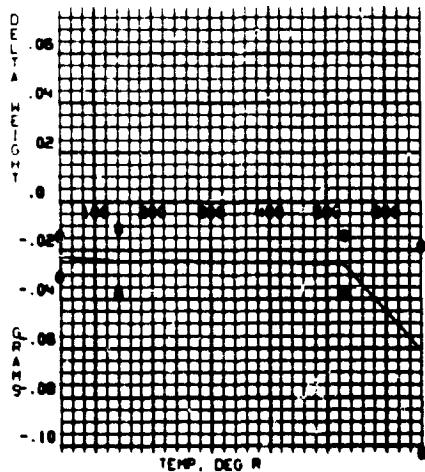


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

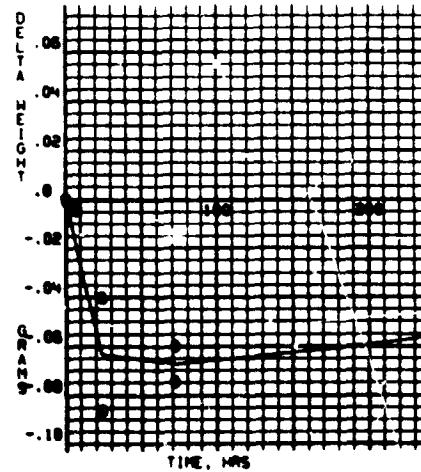
PROPERTY DELTA WEIGHT



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -TEFLON FILM, TFE
PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.16205+02
	12.0	.16167+02
	.0	.16199+02
	12.0	.16121+02
	.0	.16207+02
	24.0	.16169+02
	.0	.16237+02
	24.0	.16155+02
	.0	.16149+02
	72.0	.16123+02
	.0	.16104+02
	72.0	.16060+02

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.16207+02
	12.0	.16283+02
	.0	.16056+02
	12.0	.16135+02
	.0	.16105+02
	24.0	.16121+02
	.0	.16079+02
	24.0	.16076+02
	.0	.16214+02
	72.0	.16232+02
	.0	.16239+02
	72.0	.16160+02

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

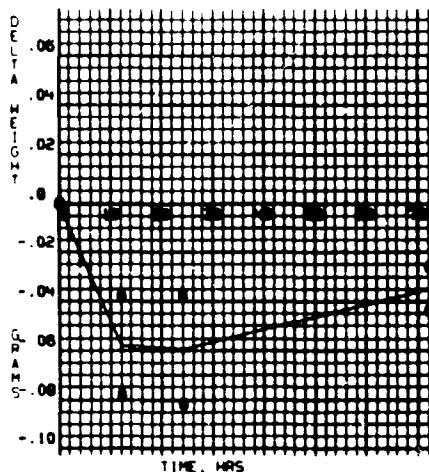
F	HOURS	GRAMS
	.0	.16174+02
	.5	.16184+02
	.0	.16208+02
	.5	.16211+02
	.0	.16197+02
	2.0	.16155+02
	.0	.16217+02
	2.0	.16147+02
	.0	.16217+02
	24.0	.16153+02
	.0	.16253+02
	24.0	.16226+02

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.16280+02
	4.2	.16273+02
	.0	.16197+02
	4.2	.16182+02
	.0	.16220+02
	150.0	.16180+02
	.0	.16221+02
	150.0	.16170+02

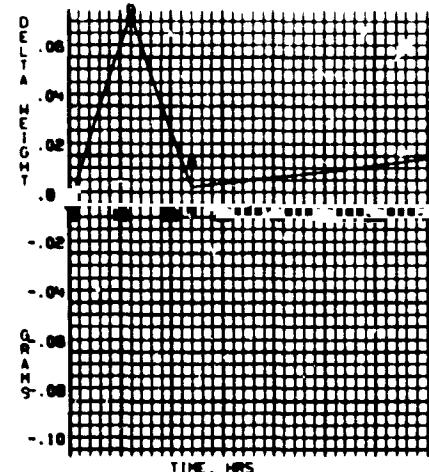
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - TEFON FILM, TFE

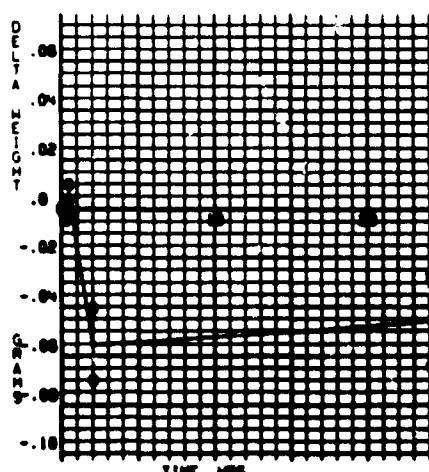


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

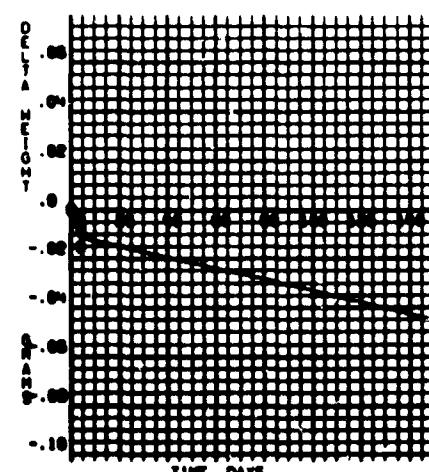
PROPERTY - DELTA HEIGHT



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -TEFLON FILM, TFF
PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F		DAYS	GRAMS
I		.0	.16227+02
		4.2	.16178+02
I		.0	.16266+02
		4.2	.16180+02
I		.0	.16250+02
		150.0	.16218+02
I		.0	.16365+02
		150.0	.16339+02

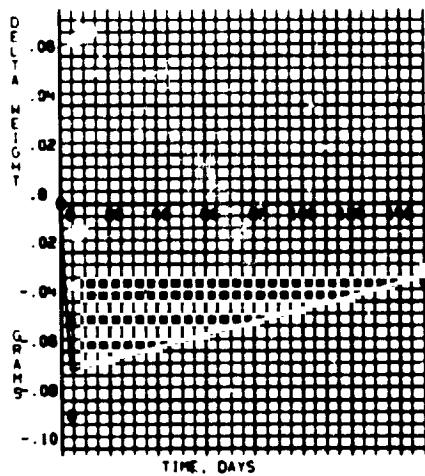
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C)+4 HR

F	F	P.P.	TORR	GRAMS
I		.000		.16201+02
		.100-02		.16106+02
I		.000		.16142+02
		.100-02		.16100+02
I		.000		.16076+02
		.760+03		.16023+02
I		.000		.16168+02
		.760+03		.16117+02

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TFST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - TEFLON FILM, TFE

PROPERTY - DELTA WEIGHT



ENVIRONMENT (IEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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MATERIAL -TEFLON FILM, TFE
 PROPERTY -TENSILE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	LB/IN	N/M
	.0	.448+02	.785+04
	.0	.425+02	.744+04
	10.0	.415+02	.727+04
	10.0	.519+02	.909+04
	150.0	.538+02	.942+04
	150.0	.519+02	.709+04

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	LB/IN	N/M
	24.0	.504+02	.883+04
	24.0	.472+02	.827+04
	240.0	.418+02	.732+04
	240.0	.435+02	.662+04

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

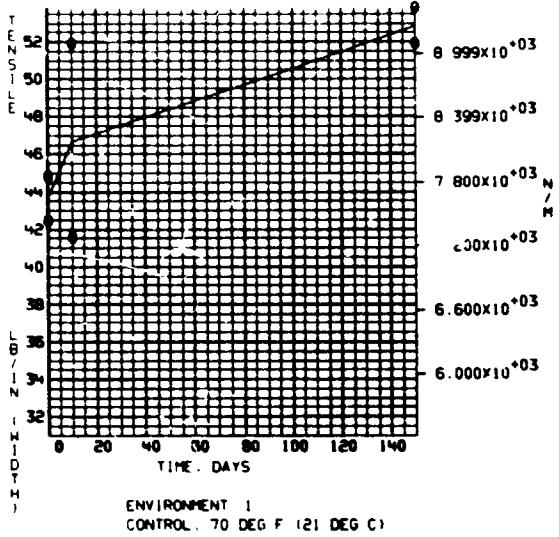
F	DEG R	DEG K	LB/IN	N/M
660.	367.	.408+02	.732+04	
660.	367.	.435+02	.762+04	
730.	294.	.398+02	.697+04	
530.	294.	.383+02	.672+04	
140.	78.	.369+02	.646+04	
37.	21.	.461+02	.808+04	
37.	21.	.436+02	.764+04	

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

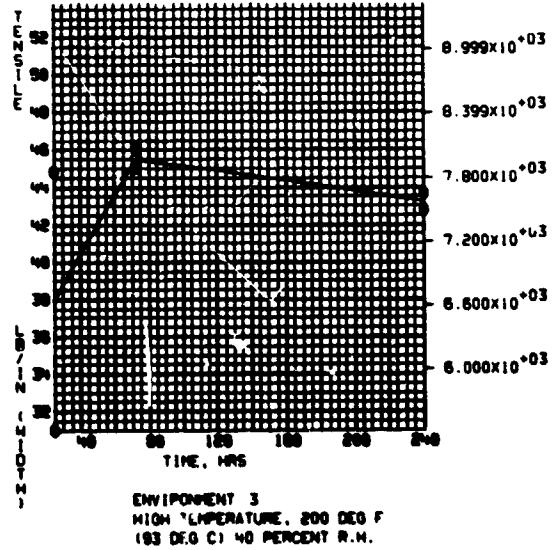
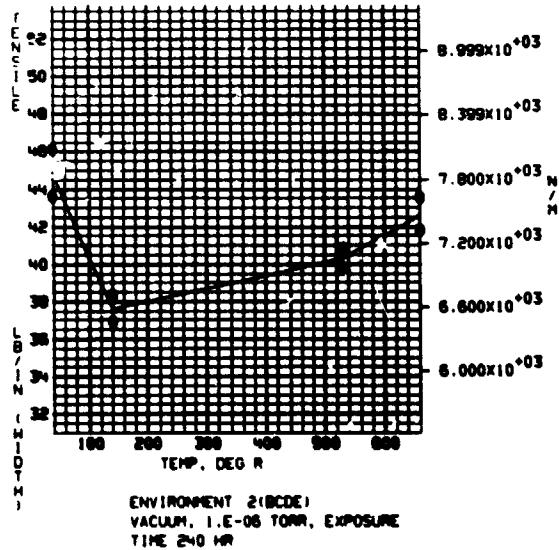
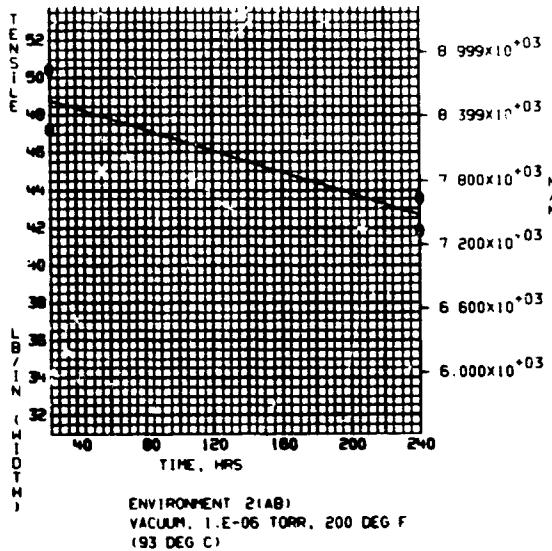
F	HOURS	LB/IN	N/M
	24.0	.448+02	.785+04
	24.0	.310+02	.542+04
	72.0	.450+02	.786+04
	72.0	.459+02	.605+04
	240.0	.436+02	.765+04
	240.0	.428+02	.749+04

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - TEFLON FILM - TFE



PROPERTY - TENSILE



MATERIAL -TEFLON FILM, TFE
PROPERTY -TENSILE

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.435+02	.762+04
	12.0	.445+02	.780+04
	24.0	.447+02	.782+04
	24.0	.435+02	.763+04
	72.0	.433+02	.758+04
	72.0	.414+02	.725+04

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	LB/IN	N/M
	12.0	.407+02	.714+04
	12.0	.435+02	.763+04
	24.0	.377+02	.660+04
	24.0	.448+02	.785+04
	72.0	.325+02	.569+04
	72.0	.422+02	.740+04

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

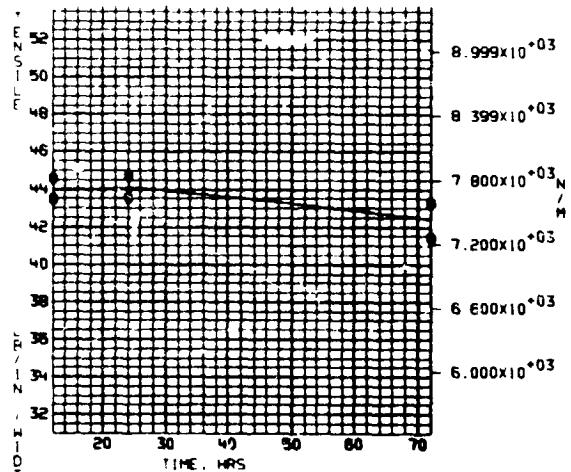
F	HOURS	LB/IN	N/M
	.5	.437+02	.766+04
	.5	.468+02	.821+04
	2.0	.470+02	.823+04
	2.0	.413+02	.724+04
	24.0	.460+02	.807+04
	24.0	.450+02	.788+04

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	LB/IN	N/M
	4.2	.435+02	.763+04
	4.2	.439+02	.769+04
	150.0	.435+02	.763+04
	150.0	.381+02	.667+04

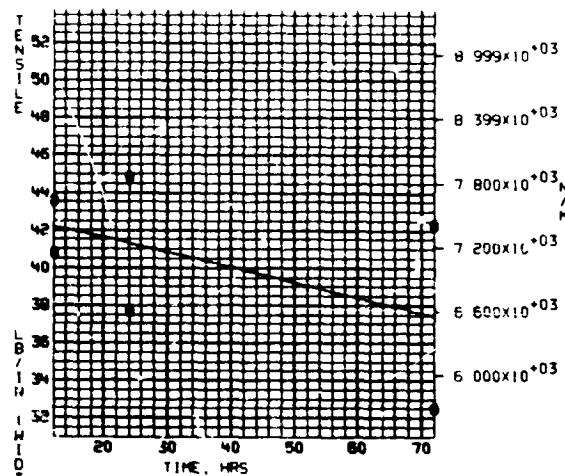
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: TEFILON FILM, TFE

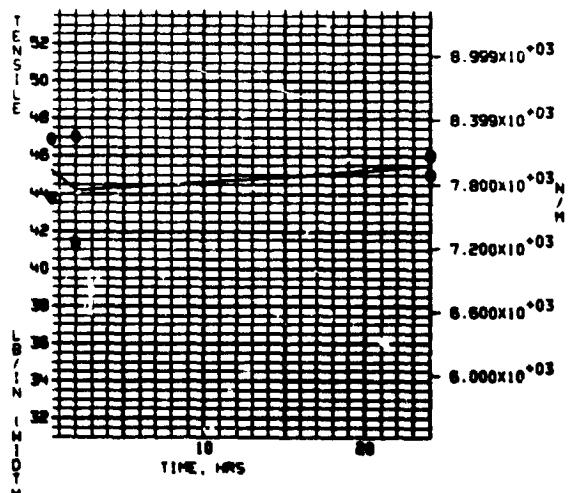


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

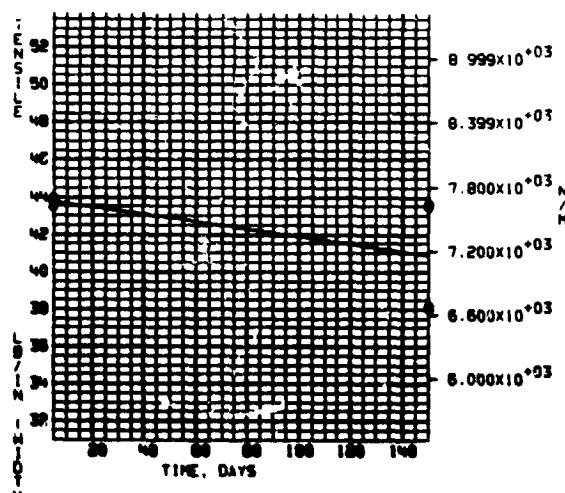
PROPERTY - TENSILE



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -TEFLON FILM, TFE
 PROPERTY -TENSILE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

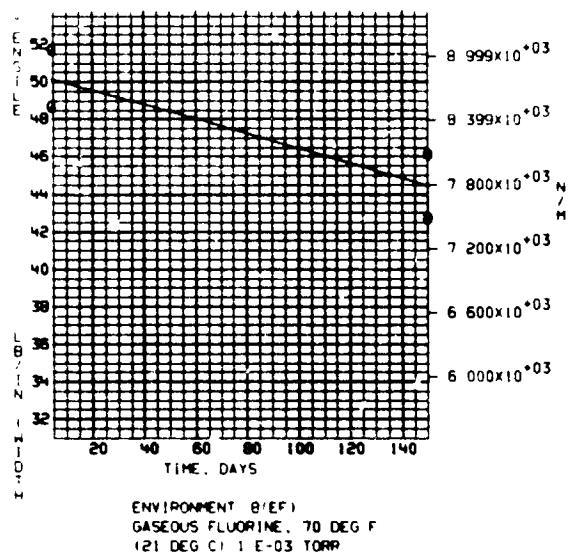
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	DAYS	LB/IN	N/M	F	F	P.P.	TORR	LB/IN	N/M
	4.2	.517+02	.905+04			.100-02		.515+02	.903+04
	4.2	.487+02	.853+04			.100-02		.494+02	.865+04
	150.0	.427+02	.748+04			.760+03		.531+02	.930+04
	150.0	.461+02	.808+04			.760+03		.515+02	.902+04

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 4 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - TEFLON FILM, TFE

PROPERTY - TENSILE



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LOCKHEED MISSILES & SPACE COMPANY

FLEXIBILITY TEST RESULTS

Material: Volume I Test

ENVIRONMENT		EXPOSURE PARAMETERS			FLEXIBILITY		
No.	DESCRIPTION	O ₂ or F ₂ Partial Press Torr	TEMP °R(°K)	TIME, HR	NO EFFECT	SUBSTRATE CRACKED	COATING CRACKED
2	Vacuum, $\sim 10^{-6}$ Torr	O ₂ or F ₂ Partial Press Torr	660 (366)	24	✓		
			660 (366)	240	✓		
			530 (234)	240	✓		
			140 (78)	240	✓		
			37 (21)	240	✓		
				24	✓		
3	200°F (93°C) 40% R.H.			72	✓		
				240	✓		
5	95% R.H. at 95°F (35°C)		12		✓		
			24		✓		
			72		✓		
6	95% R.H./Salt Air at 95°F (35°C)		12		✓		
			24		✓		
			72		✓		
7	Water Immersion at 70°F (21°C)		0.5		✓		
			2		✓		
			24		✓		
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³	100		✓		
			3600		✓		
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³	100		✓		
			3600		✓		
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³	4		✓		
			760		✓		

* See Table 5 for complete identification of test material (Volume I)

** As compared to control samples

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - TEFILON FILM, TFE

ENVIRONMENT 2B

VACUUM, 1.0E-06 TORR, 660 DEG.R (365 DEG.K)

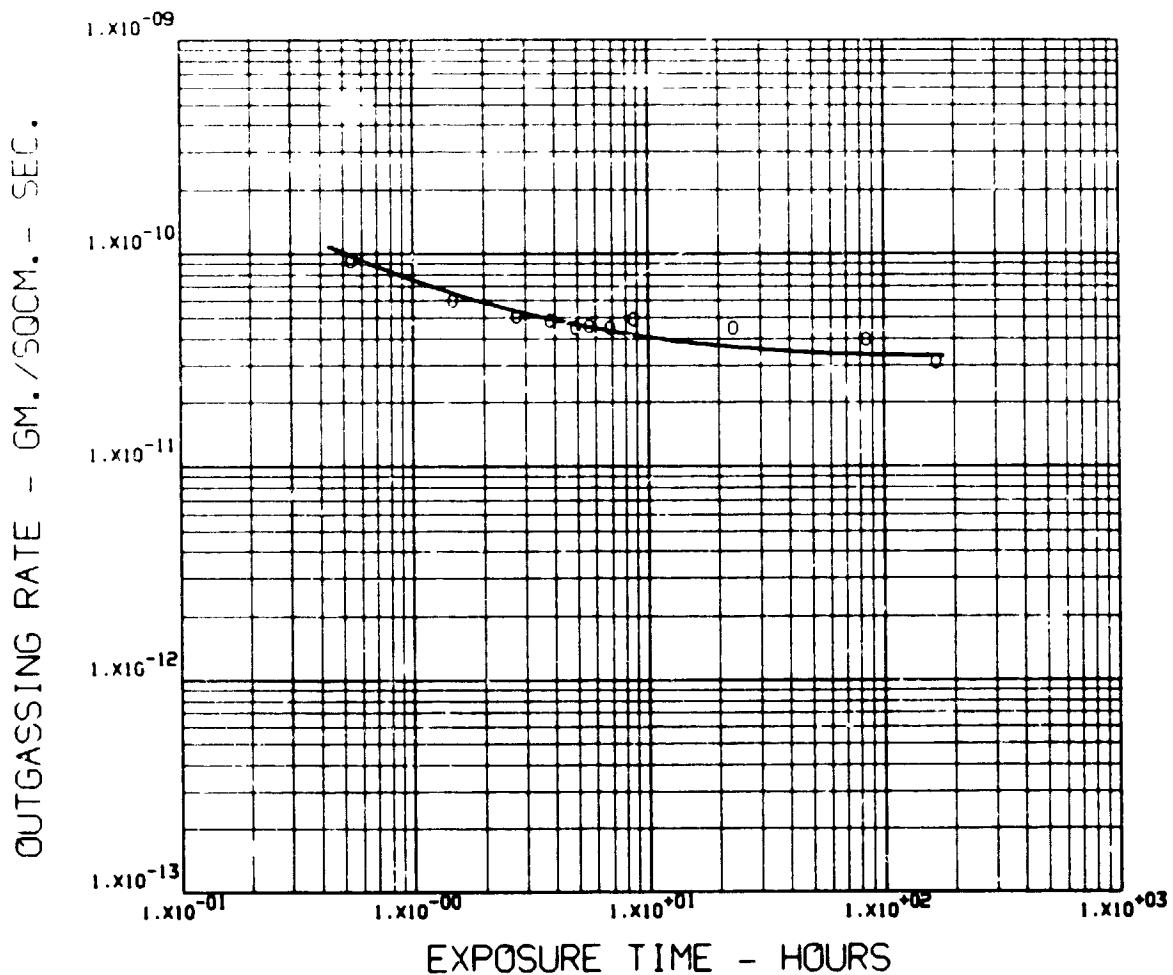
TEST DATE 042171

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 11.5370 GMS. SAMPLE AREA = 387. SG.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.53	9.19-11	.77	.18	.05
1.45	5.95-11	.81	.14	.05
2.72	5.05-11	.85	.12	.03
3.73	4.76-11	.88	.11	.01
4.88	4.46-11	.87	.10	.03
5.58	4.50-11	.89	.10	.01
6.87	4.46-11	.92	.07	.01
8.62	4.88-11	.90	.09	.01
22.93	4.48-11	.91	.07	.02
84.65	3.91-11	.89	.09	.02
167.20	3.06-11	.91	.07	.02

PROPERTY- OUTGASSING
MATERIAL- TEFILON FILM. TFE



ENVIRONMENT 2B VACUUM. 10-6 TORR. 660 DEG. R. (365 DEG. K.)

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LOCKHEED MISSILES & SPACE COMPANY

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL = TEFLON FILM, TFE

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (245 DEG.K)

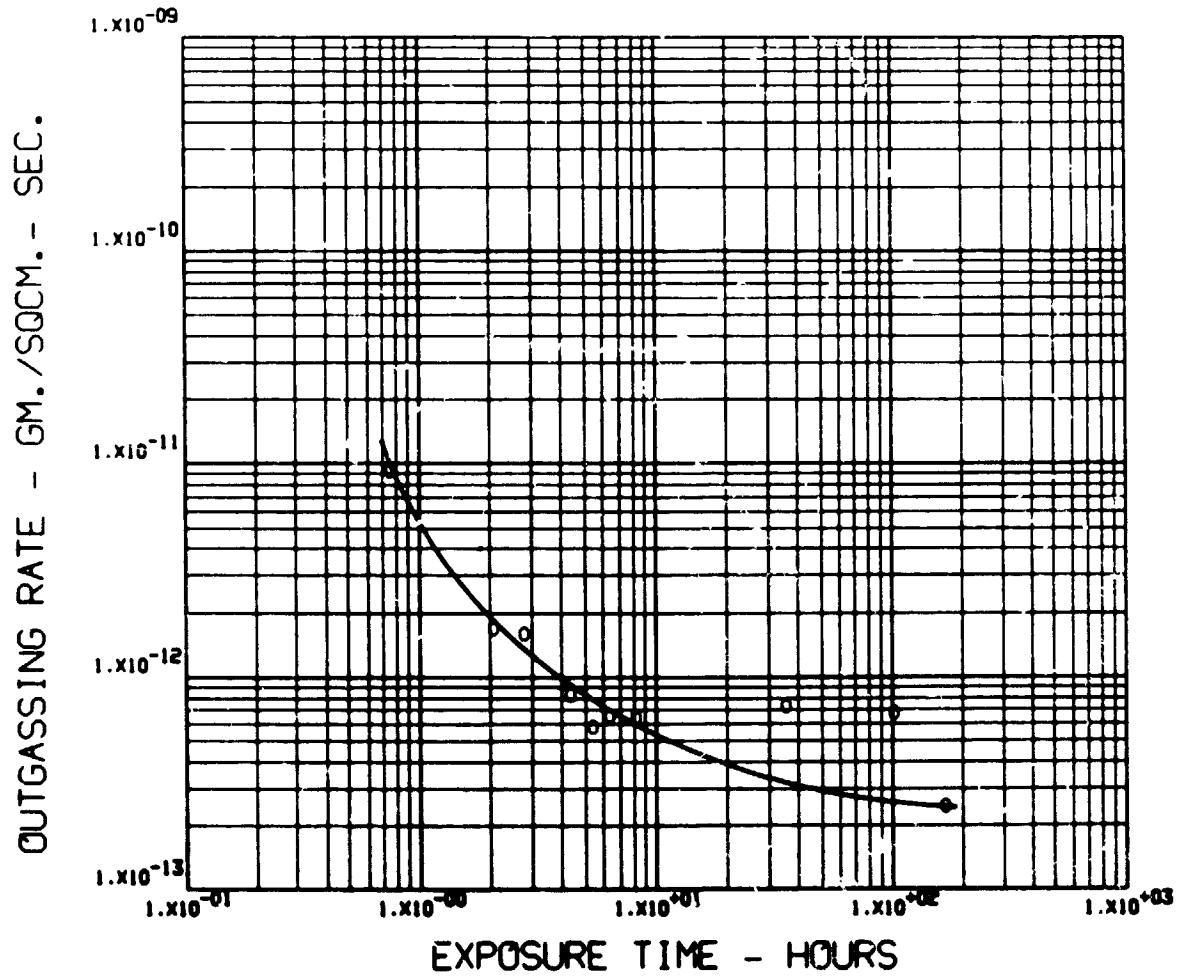
TEST DATE 022271

TEST CHAMBER NO. 1

SAMPLE WEIGHT = 11.2765 GMS. SAMPLE AREA = 378. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.75	9.24-12	.53	.45	.02
2.03	1.68-12	.80	.17	.03
2.75	1.58-12	.33	.59	.09
4.33	8.21-13	.81	.17	.02
5.37	5.78-13	.82	.16	.02
6.33	6.55-13	.80	.18	.02
8.15	6.39-13	.81	.18	.01
35.25	7.29-13	.81	.16	.02
102.00	6.74-13	.85	.13	.02
167.68	2.44-13	.96	.04	.00

PROPERTY- OUTGASSING
MATERIAL- TEFLON FILM, TFE



ENVIRONMENT 2C VACUUM. 10⁻⁶ TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = TEFLON FILM, TFE

ENVIRONMENT 4A

VACUUM, 10⁻⁶ TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

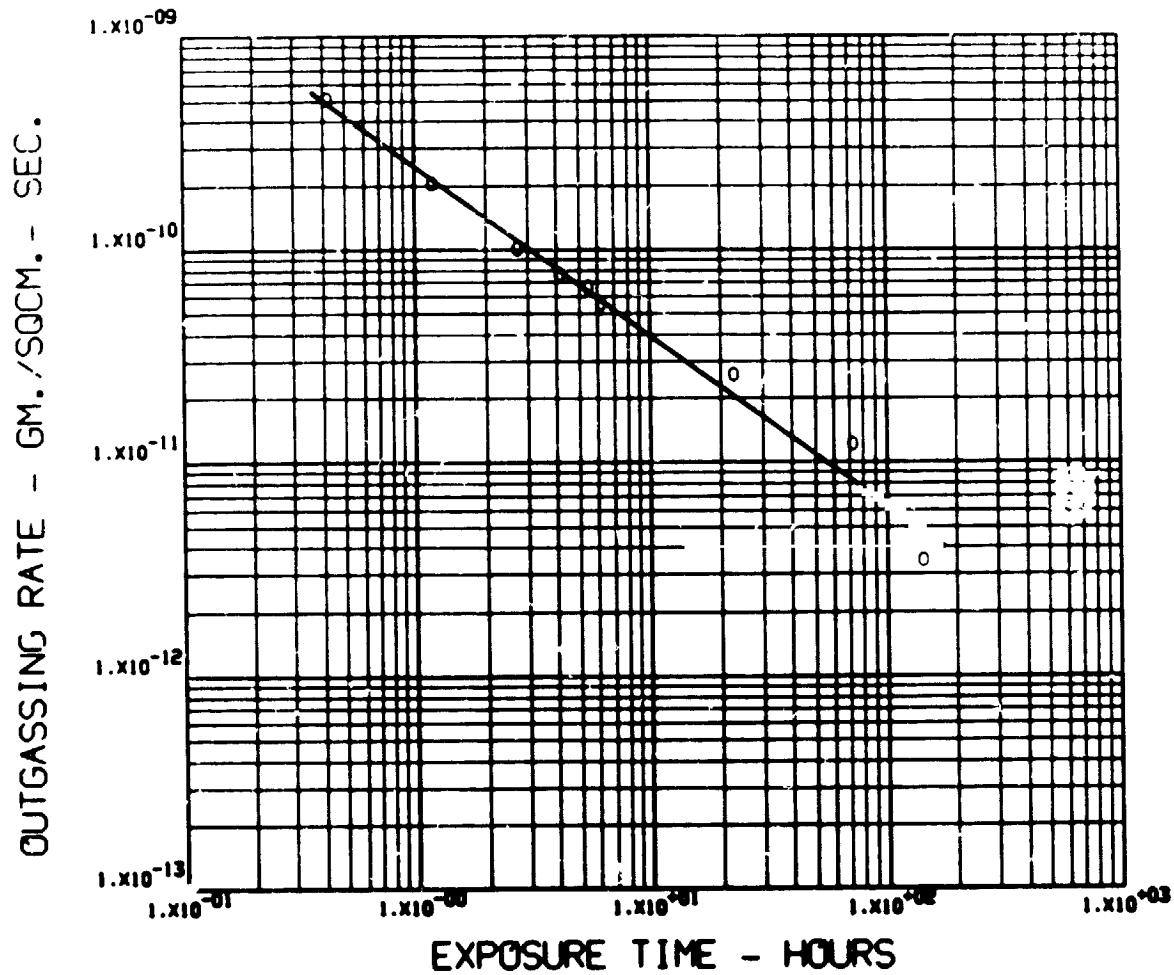
TEST DATE 061372

TEST CHAMBER NO. 2

SAMPLE WEIGHT = 12.9025 GMS. SAMPLE AREA = 433. SC.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./50CM. ² -SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.42	5.03-10	.31	.01	.68
1.17	2.01-10	.48	.00	.52
2.67	1.00-10	.54	.00	.46
4.09	7.59-11	.57	.00	.43
5.42	6.57-11	.52	.00	.48
6.17	5.51-11	.54	.00	.46
22.59	2.54-11	.41	.00	.59
71.50	1.21-11	.74	.00	.26
142.25	7.44-12	.88	.00	.12

PROPERTY - OUTGASSING
MATERIAL - TEFLON FILM, TFE



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.
) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR,
530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSI
NG TESTS AT 530 DEG. R. (294 DEG. K.)

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PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - TEFLON FILM, TFE

ENVIRONMENT 4A

VACUUM, P0F=0.6 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K).FOR
4HRS.FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

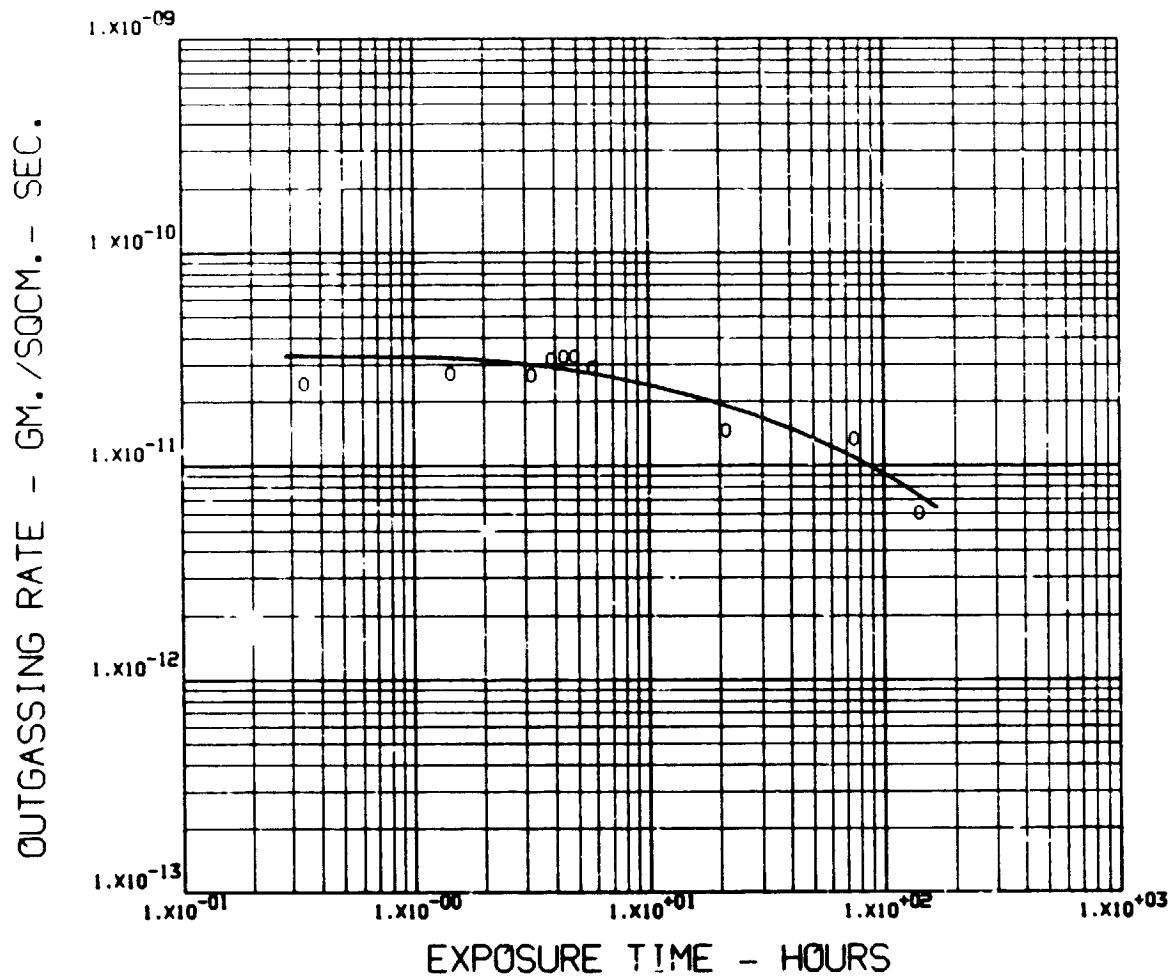
TEST DATE 060271

TEST CHAMBER NO. 3

SAMPLE WEIGHT = 1.0165 GMS. SAMPLE AREA = 369. SG.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./SQCM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.34	2.41-11	.28	.49	.23
1.42	2.70-11	.18	.33	.50
3.17	2.63-11	.23	.42	.35
3.84	3.15-11	.11	.44	.45
4.34	3.20-11	.08	.48	.44
4.84	3.21-11	.13	.41	.46
5.75	2.84-11	.11	.40	.49
21.17	1.46-11	.06	.37	.57
74.54	1.34-11	.08	.39	.54
140.02	5.95-12	.09	.38	.53

PROPERTY- OUTGASSING
MATERIAL- TEFILON FILM, TFE



ENVIRONMENT 4B VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGAS SING TESTS AT 530 DEG. R. (291 DEG. K.)

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -WEIGHT

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.45790+02
I	10.0	.45790+02
I	.0	.44745+02
I	10.0	.44740+02
I	.0	.45770+02
I	150.0	.45760+02
I	.0	.46405+02
I	150.0	.46400+02

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	GRAMS
I	.0	.45900+02
I	24.0	.45840+02
I	.0	.46190+02
I	24.0	.46140+02
I	.0	.45365+02
I	240.0	.45310+02
I	.0	.45220+02
I	240.0	.45170+02

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.45365+02
I	660.	367.	.45310+02
I	-	-	.45220+02
I	660.	367.	.45170+02
I	-	-	.45155+02
I	530.	294.	.45140+02
I	-	-	.45345+02
I	530.	294.	.45330+02
I	-	-	.45060+02
I	140.	78.	.45050+02
I	-	-	.46775+02
I	140.	78.	.46760+02
I	-	-	.45720+02
I	37.	21.	.45710+02
I	-	-	.46095+02
I	37.	21.	.46088+02

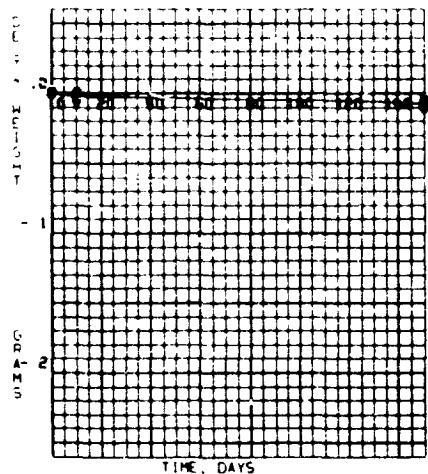
ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.45450+02
I	24.0	.45444+02
I	.0	.46565+02
I	24.0	.46547+02
I	.0	.44415+02
I	72.0	.44410+02
I	.0	.44575+02
I	72.0	.44570+02
I	.0	.45775+02
I	240.0	.45740+02
I	.0	.46470+02
I	240.0	.46430+02

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: MP-7E THERMOTROL PAINT (2A-100) ON ALUMINUM

PROJECT: DELTA OF INT



MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -WEIGHT

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	GRAMS
	.0	.45775+02
	12.0	.45770+02
	.0	.45210+02
	12.0	.45200+02
	.0	.45340+02
	24.0	.45340+02
	.0	.45030+02
	24.0	.45030+02
	.0	.45840+02
	72.0	.45830+02
	.0	.45275+02
	72.0	.45267+02

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.46005+02
	12.0	.46015+02
	.0	.46140+02
	12.0	.46180+02
	.0	.45965+02
	24.0	.46012+02
	.0	.45515+02
	24.0	.45557+02
	.0	.45415+02
	72.0	.45450+02
	.0	.45090+02
	72.0	.45150+02

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

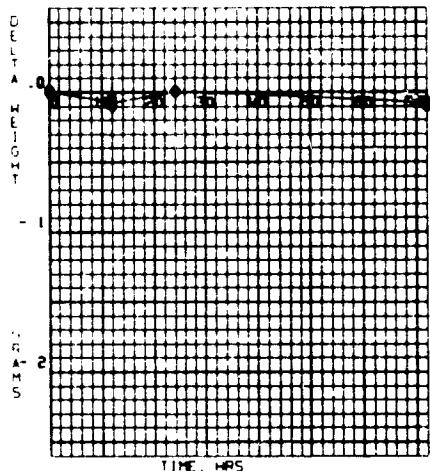
F	HOURS	GRAMS
	.0	.45750+02
	.5	.45740+02
	.0	.45050+02
	.5	.45040+02
	.0	.45775+02
	2.0	.45685+02
	.0	.45555+02
	2.0	.45550+02
	.0	.45200+02
	24.0	.45191+02
	.0	.44990+02
	24.0	.44730+02

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

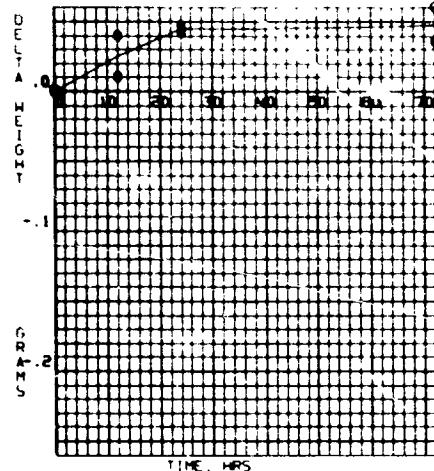
F	DAYS	GRAMS
	.0	.45275+02
	4.2	.45270+02
	.0	.45325+02
	4.2	.45330+02
	.0	.45530+02
	.0	.45530+02
	150.0	.45030+02

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

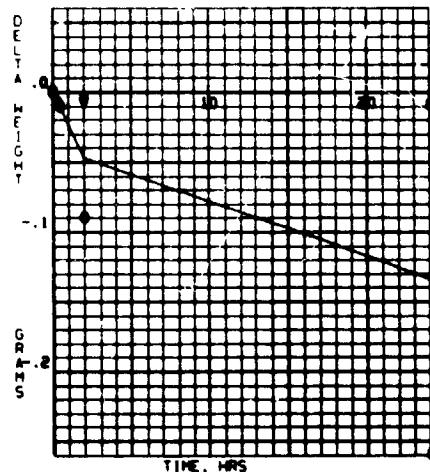
MATERIAL: WHITE THERMATEL PAINT (2A-100) ON ALUMINUM



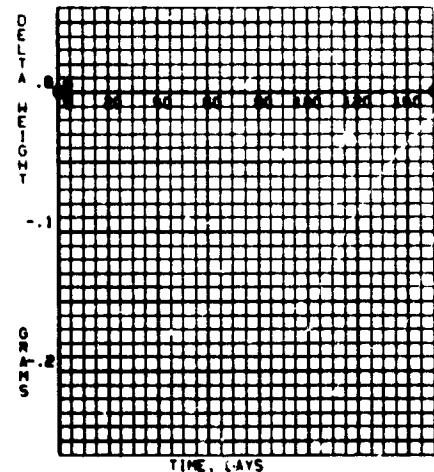
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
 GASFUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

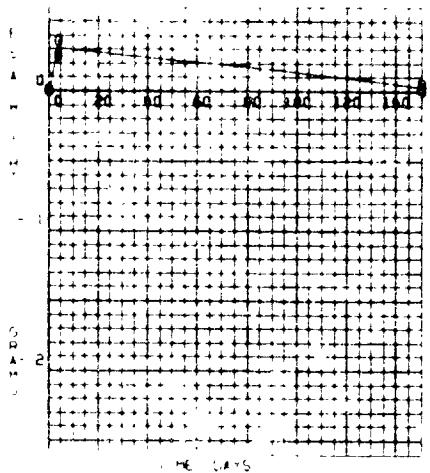
F	DAYS	GRAMS
I	.0	.45345+02
	4.2	.45370+02
I	.0	.46435+02
	4.2	.46470+02
I	.0	.44445+02
	150.0	.44450+02
I	.0	.45510+02
	150.0	.45510+02

ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	GRAMS
I	.000		.45605+02
	.100-02		.45615+02
I	.000		.46160+02
	.100-02		.46165+02
I	.000		.45260+02
	.760+03	SAMPLE DESTROYED	
I	.000		.46105+02
	.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

1000 800 600 400 200 0 1000 800 600 400 200 0



ENVIRONMENT - BRIEF
GASEOUS FLUORINE IN DEFL.
1 DEG C, 1 E-13 TORR

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LOCKHEED MISSILES & SPACE COMPANY

MATERIAL -WHITE THERMATEL PAINT(2A-100) ON ALUMINUM
 PROPERTY -EMITTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	UAYS	EMITTANCE
I	.0	.832+00
	10.0	.830+00
I	.0	.836+00
	10.0	.831+00
I	.0	.836+00
	150.0	.835+00
I	.0	.843+00
	150.0	.844+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	EMITTANCE
I	.0	.846+00
	24.0	.848+00
I	.0	.841+00
	24.0	.844+00
I	.0	.831+00
	240.0	.832+00
I	.0	.830+00
	240.0	.829+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

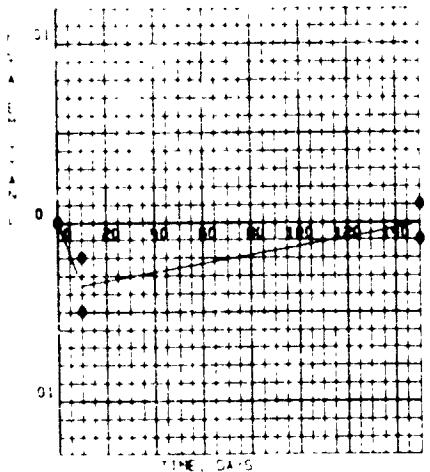
F	DEG R	DEG K	EMITTANCE
I	-	-	.831+00
	660.	367.	.832+00
I	-	-	.830+00
	660.	367.	.829+00
I	-	-	.840+00
	530.	294.	.840+00
I	-	-	.848+00
	530.	294.	.844+00
I	-	-	.843+00
	140.	78.	.838+00
I	-	-	.852+00
	140.	78.	.852+00
I	-	-	.842+00
	37.	21.	.845+00
I	-	-	.843+00
	37.	21.	.845+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.846+00
	24.0	.844+00
I	.0	.861+00
	24.0	.868+00
I	.0	.831+00
	72.0	.833+00
I	.0	.815+00
	72.0	.827+00
I	.0	.841+00
	240.0	.850+00
I	.0	.853+00
	240.0	.856+00

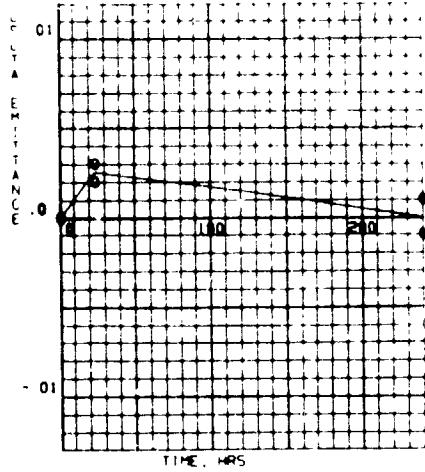
NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

TEST A - 1000 HRS. 200 DEG F. 93% R.H. ALUMINUM

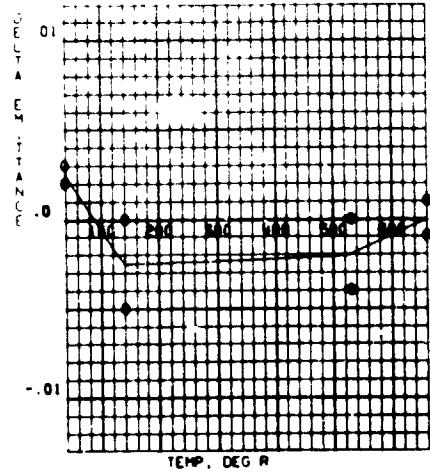


ENVIRONMENT 1
VACUUM, 1E-06 TORR 200 DEG F
(93 DEG C)

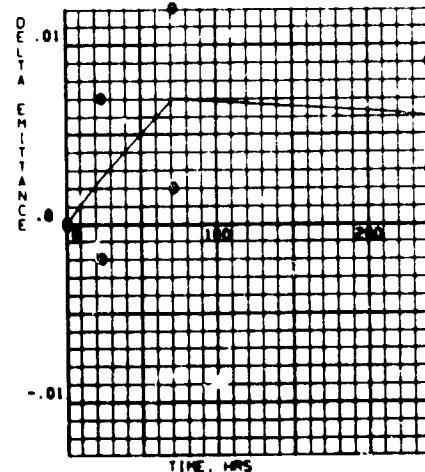
TEST B - 1000 HRS. 200 DEG F. 93% R.H.



ENVIRONMENT 2 (AB)
VACUUM, 1 E-06 TORR 200 DEG F
(93 DEG C)



ENVIRONMENT 2 (DE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -EMITTANCE

ENVIRONMENT 5
 95 PERCENT R.H., 45 DEG F
 (13 DEG C)

F	HOURS	EMITTANCE
	.0	.840+00
	12.0	.843+00
	.0	.842+00
	12.0	.843+00
	.0	.833+00
	24.0	.838+00
	.0	.847+00
	24.0	.849+00
	.0	.839+00
	72.0	.840+00
	.0	.837+00
	72.0	.836+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
	.0	.842+00
	12.0	.837+00
	.0	.847+00
	12.0	.848+00
	.0	.843+00
	24.0	.844+00
	.0	.836+00
	24.0	.826+00
	.0	.838+00
	72.0	.845+00
	.0	.837+00
	72.0	.845+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

F	HOURS	EMITTANCE
	.0	.847+00
	.5	.842+00
	.0	.841+00
	.5	.850+00
	.0	.842+00
	2.0	.844+00
	.0	.845+00
	2.0	.844+00
	.0	.854+00
	24.0	.841+00
	.0	.845+00
	24.0	.842+00

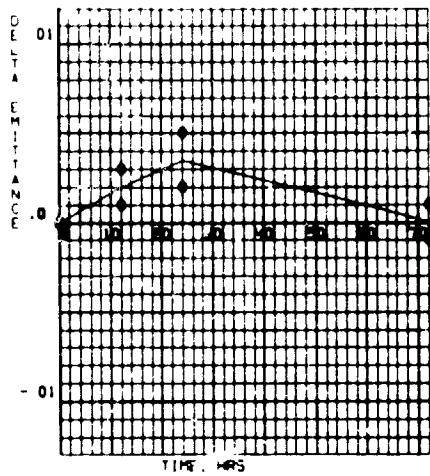
ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.832+00
	4.2	.843+00
	.0	.836+00
	4.2	.838+00
	.0	.844+00
	150.0	.841+00
	.0	.845+00
	150.0	.850+00

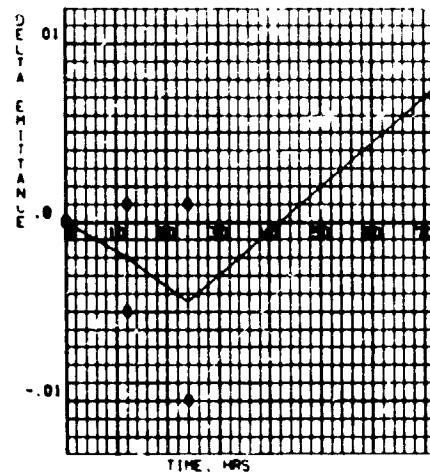
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: WHITE THERMATEL PAINT(2A-100) ON ALUMINUM

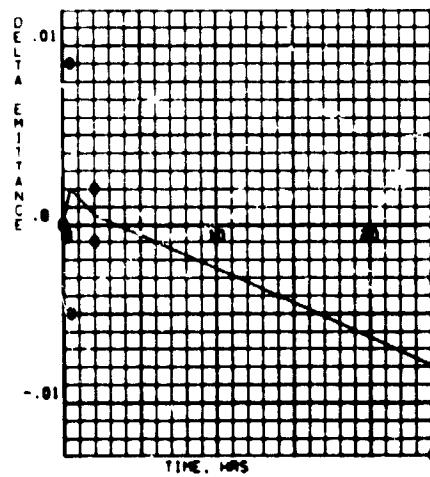
PROPERTY: DELTA EMITTANCE



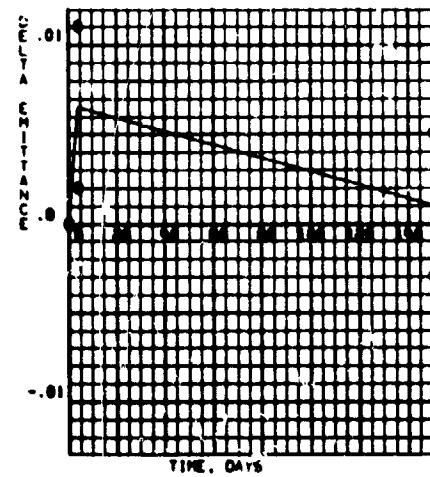
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -WHITE THERMATHOL PAINT(2A-100) ON ALUMINUM
PROPERTY -EMITTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.840+00
	4.2	.849+00
	.0	.857+00
	4.2	.865+00
	.0	.840+00
	150.0	.841+00
	.0	.843+00
	150.0	.850+00

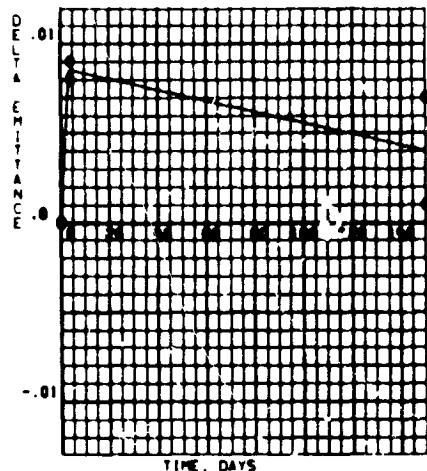
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	EMITTANCE
		.000		.850+00
		.100-02		.857+00
		.000		.843+00
		.100-02		.853+00
		.000		.835+00
		.760+03	SAMPLE DESTROYED	
		.000		.838+00
		.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL- WHITE THERMOTROL PAINT(2A-100) ON ALUMINUM

PROPERTY- DELTA EMITTANCE



ENVIRONMENT: BIEF
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -ABSORPTANCE

ENVIRONMENT 1
 CONTROL, 70 DEG F (21 DEG C)

F	DAYS	ABSORPTANCE
	.0	.160+00
	10.0	.204+00
	.0	.152+00
	10.0	.199+00
	.0	.133+00
	150.0	.177+00
	.0	.133+00
	150.0	.183+00

ENVIRONMENT 2 (AB)
 VACUUM, 1.E-06 TORR, 200 DEG F
 (93 DEG C)

F	HOURS	ABSORPTANCE
	.0	.143+00
	24.0	.185+00
	.0	.148+00
	24.0	.194+00
	.0	.143+00
	240.0	.184+00
	.0	.143+00
	240.0	.184+00

ENVIRONMENT 2 (BCDE)
 VACUUM, 1.E-06 TORR, EXPOSURE
 TIME 240 HR

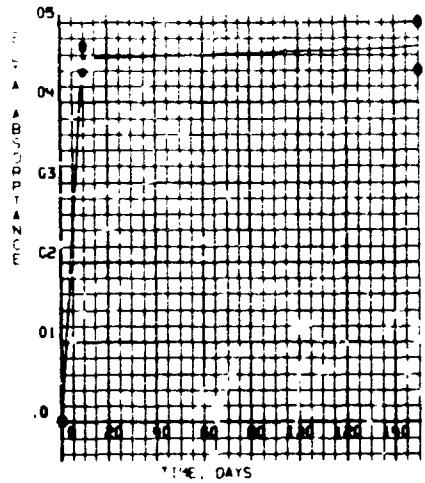
F	1 EGF H DEG K	ABSORPTANCE
	- -	.143+00
	4.0 367.	.184+00
	- -	.143+00
	650. 367.	.184+00
	- -	.143+00
	530. 294.	.194+00
	- -	.148+00
	530. 294.	.189+00
	- -	.147+00
	140. 78.	.187+00
	- -	.131+00
	140. 78.	.174+00
	- -	.151+00
	37. 21.	.175+00
	- -	.151+00
	37. 21.	.179+00

ENVIRONMENT 3
 HIGH TEMPERATURE, 200 DEG F
 (93 DEG C) 40 PERCENT R.H.

F	HOURS	ABSORPTANCE
	.0	.151+0
	24.0	.183+00
	.0	.144+00
	24.0	.162+00
	.0	.161+00
	72.0	.199+00
	.0	.194+00
	72.0	.198+00
	.0	.147+00
	240.0	.181+00
	.0	.151+00
	240.0	.181+00

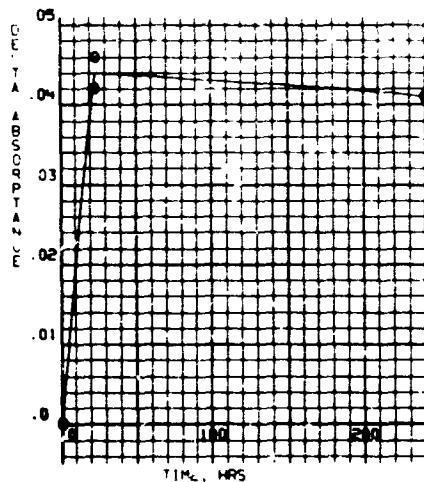
NOTE. .SEF TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATCH A: WHITE THERMOTROL PA-1001 ON ALUMINUM

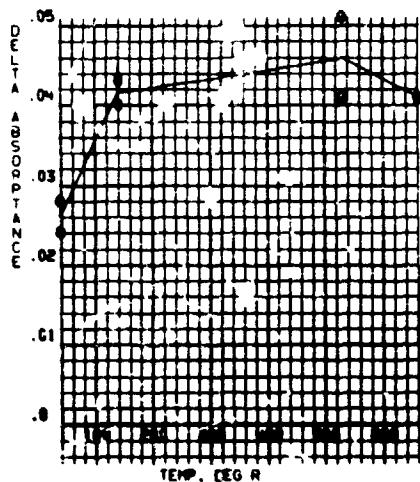


ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

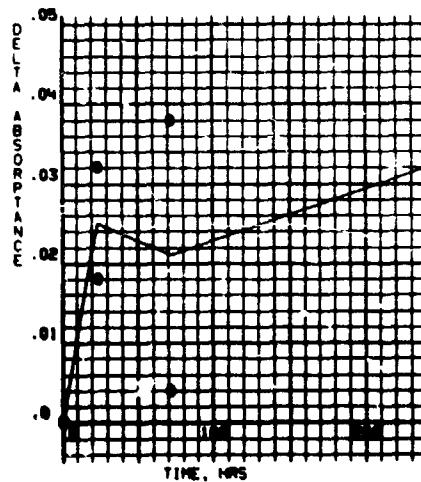
PROPERTY: DELTA ABSORBANCE



ENVIRON. ENT. 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 210 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -ABSORPTANCE

ENVIRONMENT 5
 95 PERCENT R.H. 95 DEG F
 (35 DEG C)

F	HOURS	ABSORPTANCE
1	.0	.140+00
	12.0	.171+00
1	.0	.148+00
	12.0	.176+00
1	.0	.151+00
	24.0	.183+00
1	.0	.151+00
	24.0	.182+00
1	.0	.151+00
	72.0	.179+00
1	.0	.174+00
	72.0	.181+00

ENVIRONMENT 6
 95 PERCENT R.H./SALT AIR
 95 DEG F (35 DEG C)

F	HOURS	ABSORPTANCE
1	.0	.191+00
	12.0	.186+00
1	.0	.174+00
	12.0	.180+00
1	.0	.162+00
	24.0	.184+00
1	.0	.179+00
	24.0	.188+00
1	.0	.190+00
	72.0	.185+00
1	.0	.176+00
	72.0	.176+00

ENVIRONMENT 7
 WATER IMMERSION AT 70 DEG F
 (21 DEG C)

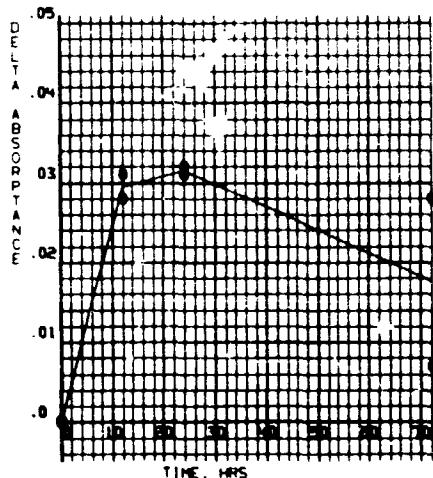
F	HOURS	ABSORPTANCE
1	.0	.160+00
	.5	.186+00
1	.0	.149+00
	.5	.188+00
1	.0	.148+00
	2.0	.199+00
	.0	.157+00
	2.0	.199+00
1	.0	.158+00
	24.0	.187+00
1	.0	.158+00
	24.0	.187+00

ENVIRONMENT 8 (CD)
 GASEOUS OXYGEN, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	ABSORPTANCE
1	.0	.154+00
	4.2	.171+00
1	.0	.158+00
	4.2	.175+00
1	.0	.172+00
	150.0	.202+00
	.0	.167+00
	150.0	.198+00

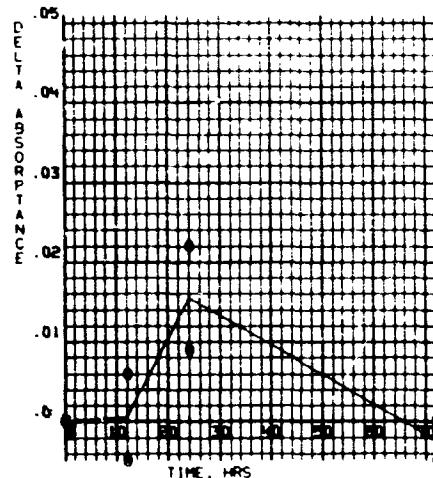
NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - WHITE THERMOTROL PAINT(2A-100) ON ALUMINUM

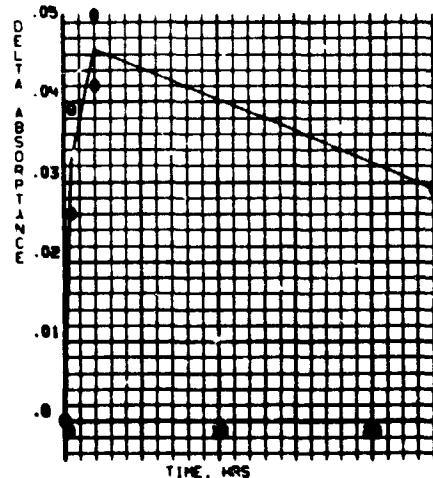


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C.)

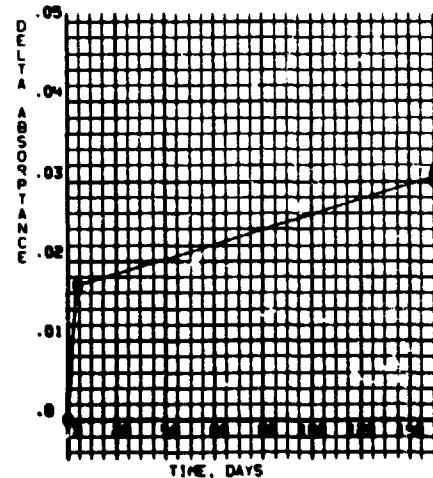
PROPERTY - DELTA ABSORBTANCE



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C.)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C.)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORN

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON ALUMINUM
 PROPERTY -ABSORPTANCE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E-03 TORR

F	DAYS	ABSORPTANCE
I	.0	.158+00
	4.2	.192+00
I	.0	.163+00
	.2	.192+00
I	.0	.177+00
	150.0	.217+00
I	.0	.179+00
	150.0	.202+00

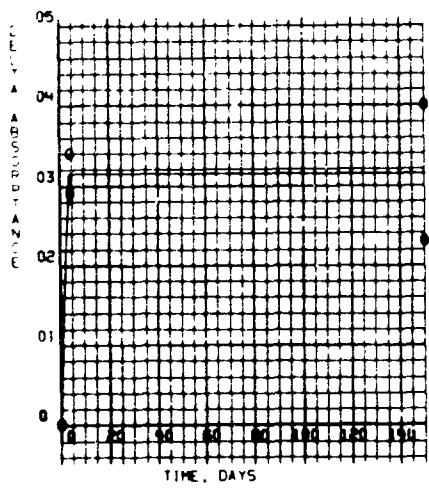
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C),4 HR

F	F	P.P. TORR	ABSORPTANCE
I		.000	.158+00
		.100-02	.200+00
I		.000	.177+00
		.100-02	.200+00
I		.000	.172+00
		.760+03	SAMPLE DESTROYED
I		.000	.165+00
		.760+03	SAMPLE DESTROYED

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: WHITE THERMOTOL PAINT RA-1001 ON ALUM NUM

PROPERTY: DELTA ABSORPTION %



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) : E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

ADHESION TEST RESULTS

Material*: Thermatrol Paint on Aluminum, TH-A

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0
			660 (366)	240	0
			530 (294)	240	0
			140 (78)	240	0
			37 (21)	240	0
			24		0
3	200°F (93°C) 40% R.H.		72		0
			240		0
			12		0
			24		0
5	95% R.H. at 95°F (35°C)		72		0
			12		0
			24		0
			72		0
6	95% R.H./Salt Air at 95°F(35°C)		12		0
			24		0
			72		0
			0.5		0
7	Water Immersion at 70°F (21°C)		2		0
			24		0
			100		0
8c, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}	3600		0
			100		0
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}	3600		5/7**
			100		0
8g, h	95% R.H./F ₂ at 95°F (35°C)	10^{-3}	4		0
			760		Destroyed in environment

* See Table 5 for complete identification of test material (Volume I).
 ** Two specimens

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = WHITE THERMOTROL PAINT (2A-1C)
ON ALUMINUM

ENVIRONMENT 2B

VACUUM, 10⁻⁶ TORR, 660 DEG.R (365 DEG.K)

TEST DATE 042671

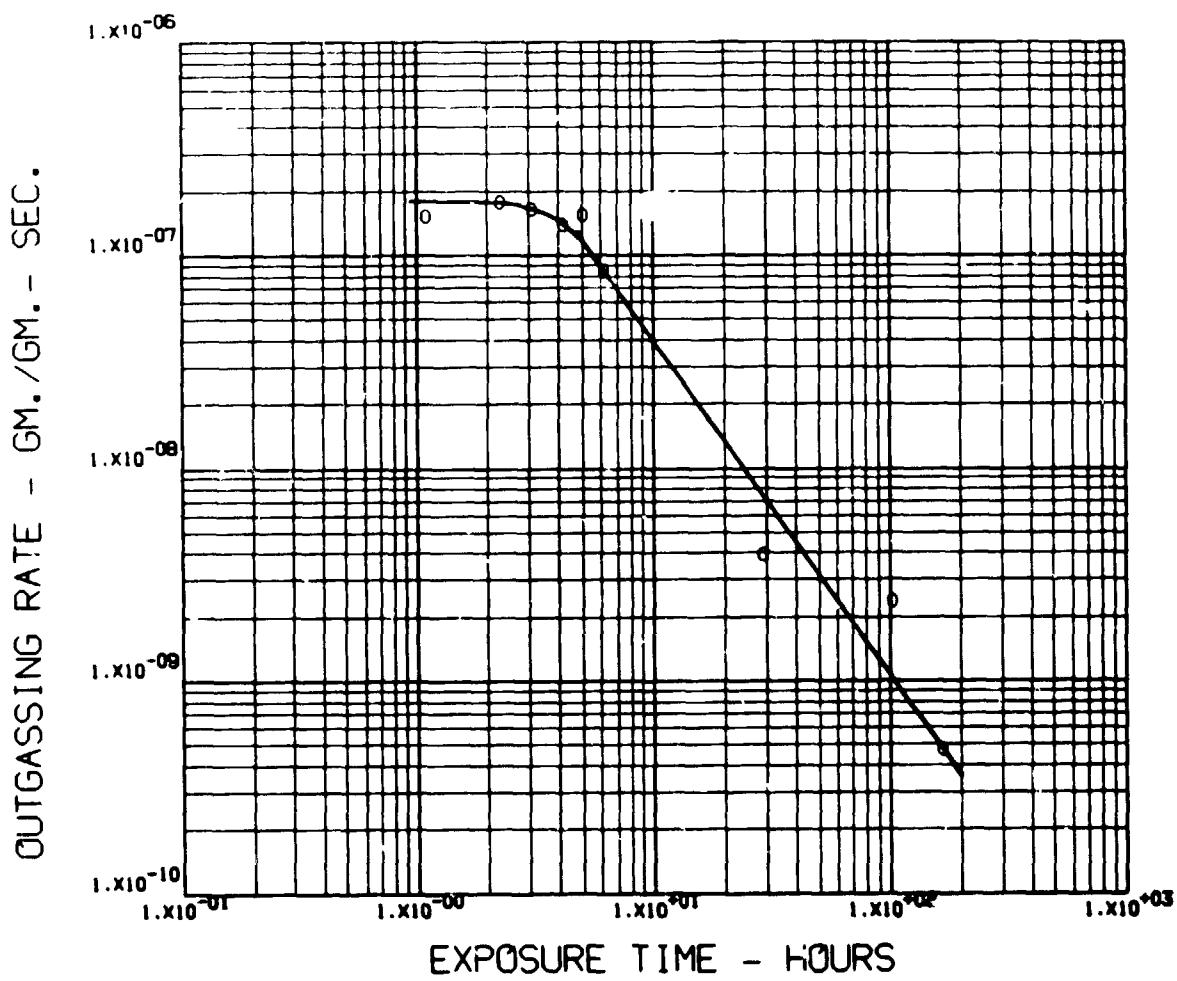
TEST CHAMBER NO. 1

SAMPLE HEIGHT = 1.0355 CMS. SAMPLE AREA = 77. 56 CMS.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
1.00	1.52-07	.80	.19	.02
2.25	1.76-07	.82	.17	.02
3.07	1.64-07	.82	.17	.01
4.17	1.38-07	.85	.14	.01
5.00	1.54-07	.87	.12	.01
6.17	8.26-08	.86	.14	.00
29.00	3.92-09	.87	.12	.01
101.42	2.34-09	.85	.14	.01
166.05	4.75-10	.89	.10	.01

PROPERTY - OUTGASSING

MATERIAL- WHITE THERMATROL PAINT(2A-100) ON
ALUMINUM



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - WHITE THERMATROL PAINT(2A-100)
ON ALUMINUM

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

TEST DATE 062972

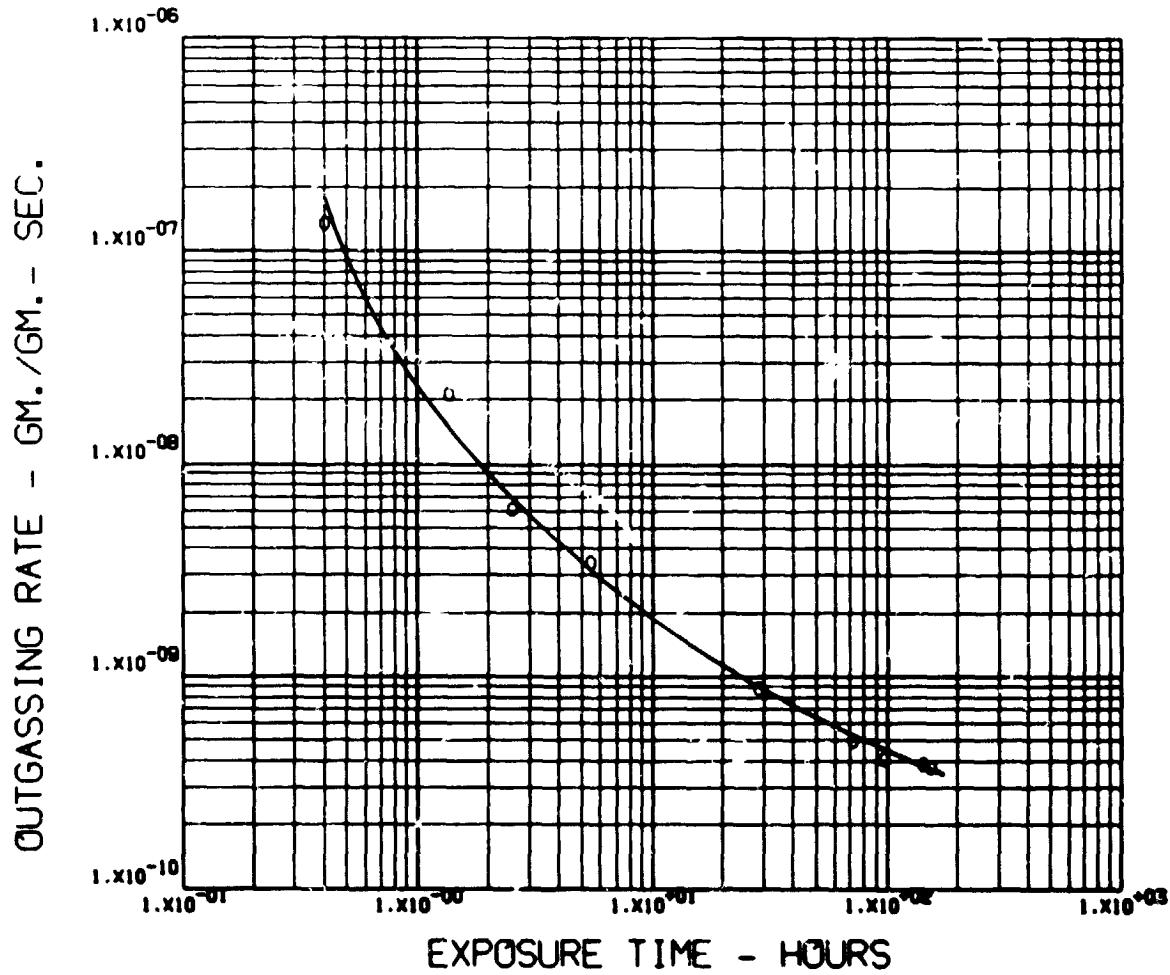
TEST CHAMBER NO. 4

SAMPLE WEIGHT = .9605 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.40	1.34-07	.82	.17	.01
1.35	2.11-08	.85	.14	.00
2.50	6.08-09	.83	.16	.01
5.45	3.43-09	.86	.13	.01
28.50	8.69-10	.88	.11	.01
71.25	4.95-10	.87	.13	.00
96.25	4.08-10	.92	.08	.00
142.05	3.82-10	.91	.08	.00
154.50	3.69-10	.95	.05	.00

PROPERTY - OUTGASSING

MATERIAL - WHITE THERMATROL PAINT(2A-100) ON
ALUMINUM



ENVIRONMENT 2C VACUUM. 10-6 TORR. 530 DEG. R. (295 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - WHITE THERMATEL PAINT(2A-100)
ON ALUMINUM

ENVIRONMENT 4A

VACUUM, 10^{-6} TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

TEST DATE 060872

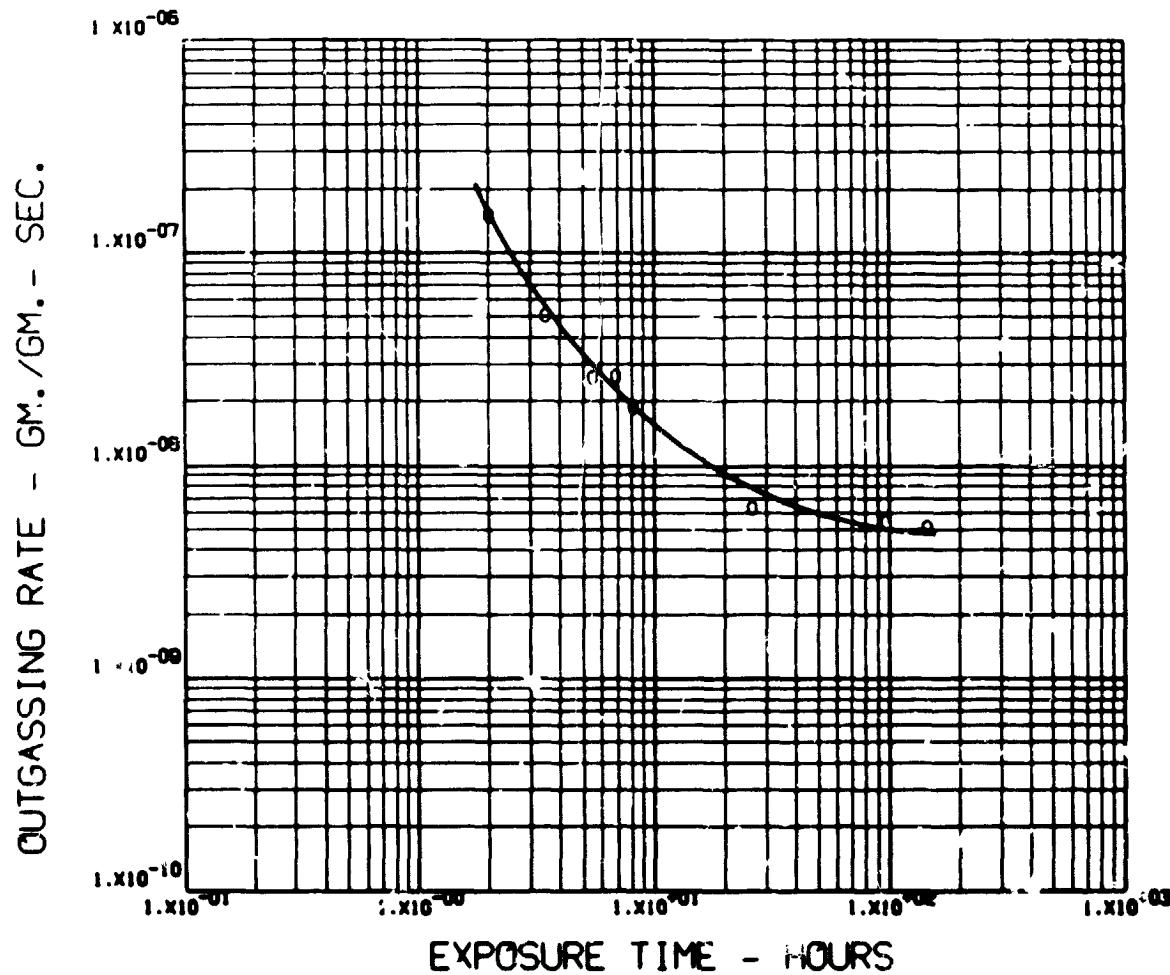
TEST CHAMBER NO. 4

SAMPLE WT GHT = 1.1510 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
2.00	1.48-07	.29	.71	.00
3.42	5.06-08	.25	.60	.16
5.42	2.57-08	.61	.28	.11
6.84	2.59-08	.34	.30	.46
8.17	1.87-08	.32	.31	.47
25.67	6.23-09	.49	.31	.17
95.34	5.35-09	.33	.38	.00
144.17	5.08-09	.41	+	.00

PROPERTY - OUTGASSING

MATERIAL - WHITE THERMATROL PAINT(2A-100) ON
ALUMINUM



ENVIRONMENT 4A VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - WHITE THERMATROL PAINT(2A-100)
ON ALUMINUM

ENVIRONMENT 4B

VACUUM, 1.0E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

TEST DATE 091371

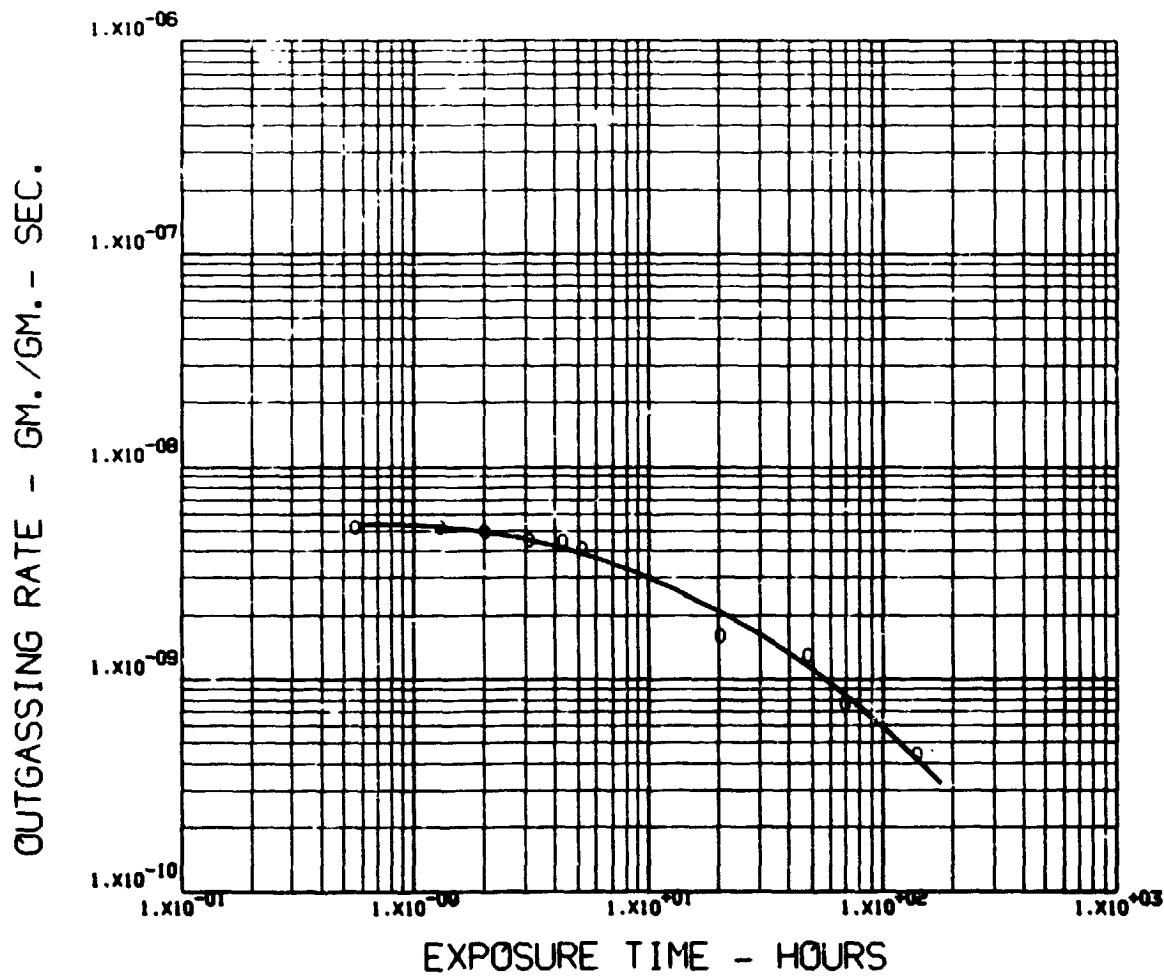
TEST CHAMBER NO. 1

SAMPLE WEIGHT = 2.0665 GM. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.55	5.17-09	.32	.36	.31
1.29	5.16-09	.35	.33	.33
1.49	4.89-09	.29	.36	.34
3.09	4.47-09	.24	.38	.38
4.25	4.38-09	.22	.40	.38
5.17	4.08-09	.17	.40	.42
20.25	1.58-09	.14	.47	.38
47.80	1.27-10	.13	.48	.40
68.67	7.58-10	.19	.41	.41
141.00	4.41-10	.18	.46	.36

PROPERTY - OUTGASSING

MATERIAL - WHITE THERMATROL PAINT(2A-100) ON
ALUMINUM



ENVIRONMENT 4B VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR. 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - WHITE THERMOTROL PAINT (2A-120) ON FIBERGLASS

PROPERTY - WEIGHT

ENVIRONMENT I
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.26965+02
I	10.0	.27180+02
I	.0	.26973+02
I	10.0	.27160+02
I	.0	.26103+02
I	150.0	.26140+02
I	.0	.26063+02
I	150.0	.26210+02

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 PFG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.26237+02
	24.0	.26470+02
I	.0	.26856+02
	24.0	.26850+02
I	.0	.25825+02
	240.0	.25940+02
I	.0	.25260+02
	240.0	.25275+02

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.25825+02
I	660.	367.	.25940+02
I	-	-	.25260+02
I	660.	367.	.25275+02
I	-	-	.26930+02
I	530.	294.	.26830+02
I	-	-	.26397+02
I	530.	294.	.26510+02
I	-	-	.27694+02
I	140.	78.	.27770+02
I	-	-	.25762+02
I	140.	78.	.25680+02
I	-	-	.25760+02
I	37.	21.	.25780+02
I	-	-	.26143+02
I	37.	21.	.26200+02

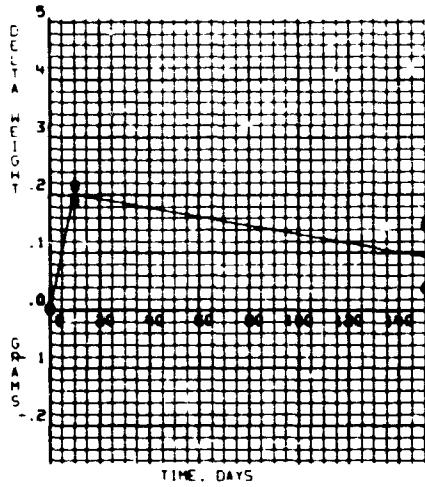
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
	.0	.26293+02
	24.0	.26475+02
	.0	.26367+02
	24.0	.26566+02
	.0	.26220+02
	72.0	.26410+02
	.0	.25525+02
	72.0	.25910+02
	.0	.25468+02
	240.0	.25800+02
	.0	.25325+02
	240.0	.25830+02

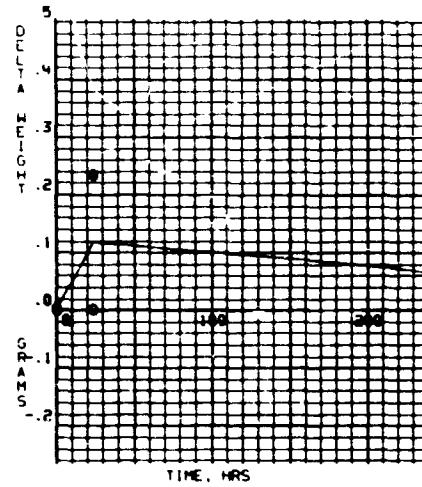
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL: WHITE THERMOTITE PAINT 2A 100 ON FIBERGLASS

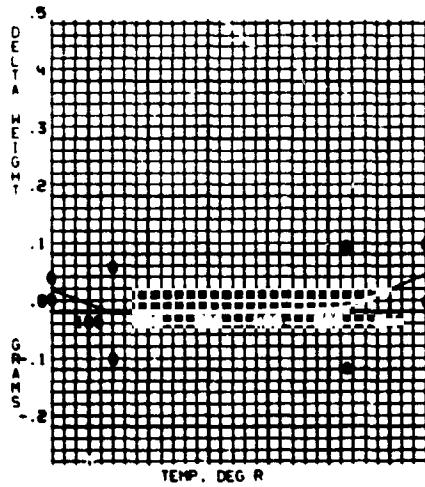
PROPERTY: DELTA HEIGHT



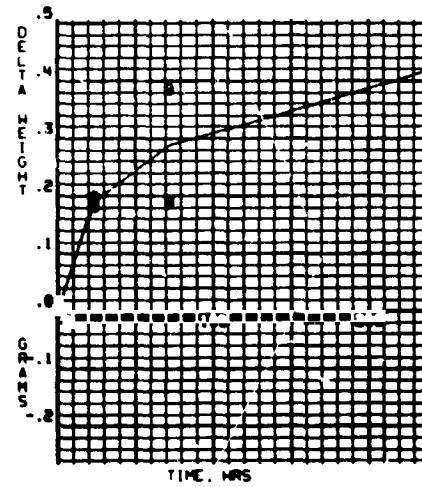
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON FIBERGLASS

PROPERTY -WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
I	.0	.25743+02
	12.0	.25780+02
I	.0	.26627+02
	12.0	.26660+02
I	.0	.25683+02
	24.0	.25730+02
I	.0	.25395+02
	24.0	.25400+02
I	.0	.26140+02
	72.0	.26123+02
I	.0	.24933+02
	72.0	.24950+02

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
I	.0	.25660+02
	12.0	.25685+02
I	.0	.26223+02
	12.0	.26220+02
I	.0	.25175+02
	24.0	.25112+02
I	.0	.25775+02
	24.0	.25800+02
I	.0	.25620+02
	72.0	.25720+02
I	.0	.26485+02
	72.0	.26650+02

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	GRAMS
I	.0	.26620+02
	.5	.26720+02
I	.0	.25975+02
	.5	.26030+02
I	.0	.25995+02
	2.0	.25728+02
I	.0	.25855+02
	2.0	.25601+02
I	.0	.27005+02
	24.0	.27020+02
I	.0	.26670+02
	24.0	.26780+02

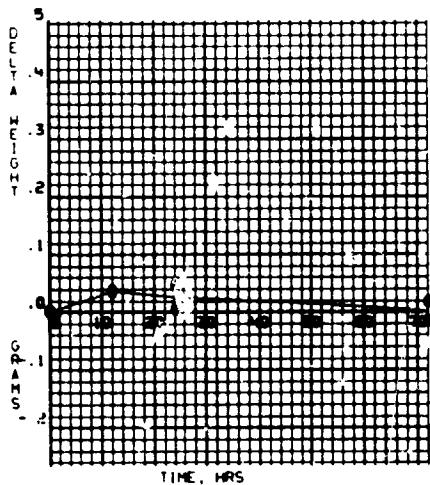
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.25705+02
	4.2	.25840+02
I	.0	.26325+02
	4.2	.26610+02
I	.0	.26273+02
	150.0	.26520+02
I	.0	.25740+02
	150.0	.25860+02

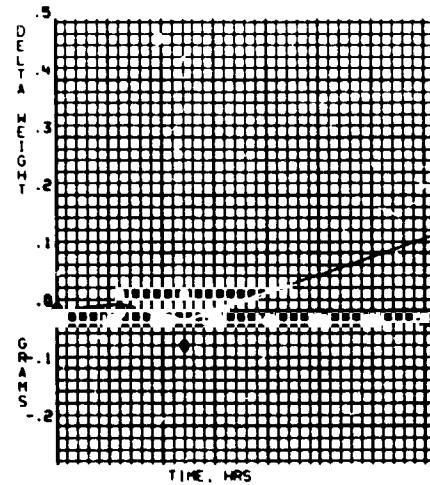
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - WHITE THERMATROL PAINT '2A-100' ON FIBERGLASS

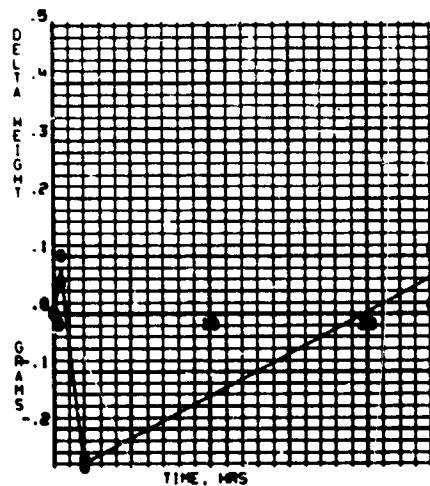
PROPERTY - DELTA WEIGHT



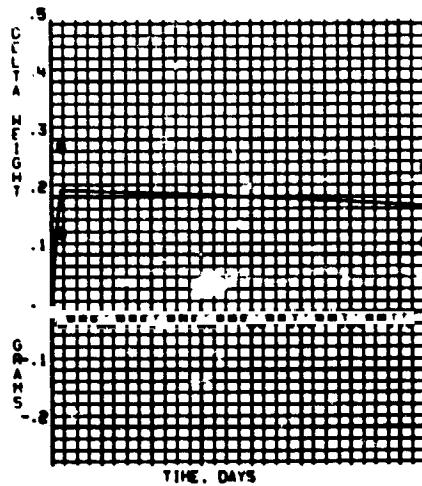
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. / SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -WHITE THERMOTROL PAINT(2A-100) ON FIBERGLASS

PROPERTY -WEIGHT

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.25340+02
I	4.2	.25930+02
I	.0	.25717+02
I	4.2	.25730+02
I	.0	.26040+02
I	150.0	.26050+02
I	.0	.25435+02
I	150.0	.25520+02

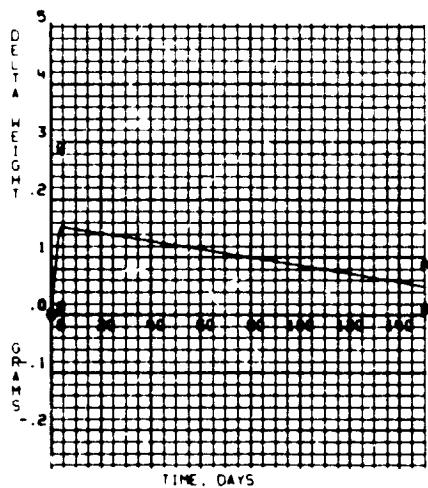
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	F	P.P.	TORR	GRAMS
I		.000		.26020+02
I		.100+02		.26055+02
I		.000		.26440+02
I		.100+02		.26830+02
I		.000		.25400+02
		.760+03	SAMPLE DESTROYED	
I		.000		.25987+02
		.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: WHITE THERMOTROL PAINT (2A-100) ON FIBERGLASS

PROPERTY: DELTA WEIGHT



ENVIRONMENT: BIEFI
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

MATERIAL -WHITE THERMATROL PAINT(PA-100) ON FIBERGLASS

PROPERTY -EMITTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAY	EMITTANCE
I	.0	.891+00
I	10.0	.889+00
I	.0	.890+00
I	10.0	.887+00
I	.0	.889+00
I	150.0	.895+00
I	.0	.888+00
I	150.0	.893+00

ENVIRONMENT 2 (FAR)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	EMITTANCE
I	.0	.887+00
I	24.0	.889+00
I	.0	.888+00
I	24.0	.890+00
I	.0	.887+00
I	240.0	.890+00
I	.0	.892+00
I	240.0	.891+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	EMITTANCE
I	-	-	.887+00
I	660.	367.	.890+00
I	-	-	.892+00
I	660.	367.	.891+00
I	-	-	.890+00
I	530.	294.	.897+00
I	-	-	.890+00
I	530.	294.	.891+00
I	-	-	.890+00
I	140.	78.	.888+00
I	-	-	.888+00
I	140.	78.	.890+00
I	-	-	.887+00
I	37.	21.	.893+00
I	-	-	.889+00
I	37.	21.	.893+00

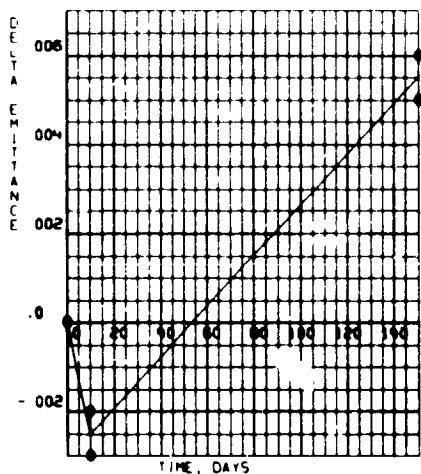
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.890+00
I	24.0	.891+00
I	.0	.891+00
I	24.0	.890+00
I	.0	.889+00
I	72.0	.891+00
I	.0	.889+00
I	72.0	.895+00
I	.0	.888+00
I	240.0	.893+00
I	.0	.887+00
I	240.0	.893+00

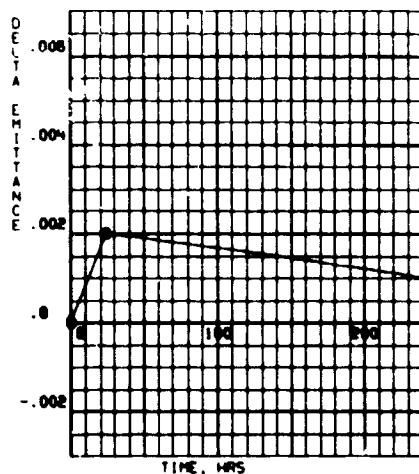
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: WHITE THERMOTEX PAINT(2A-100) ON FIBERGLASS

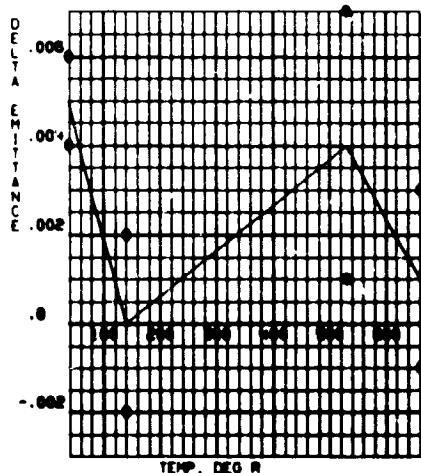
PROPERTY: DELTA EMITTANCE



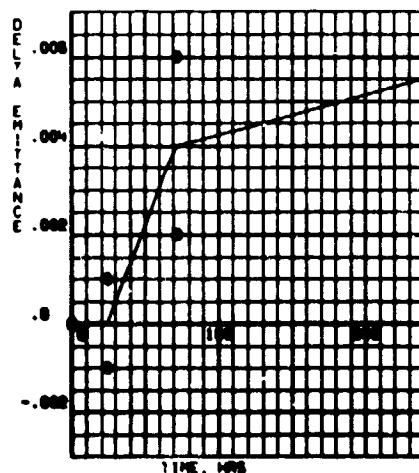
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - WHITE THERMOTROL PAINT (2A-100) ON FIBERGLASS

PROPERTY - EMITTANCE

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	EMITTANCE
I	.0	.889+00
	12.0	.891+00
I	.0	.888+00
	12.0	.888+00
I	.0	.889+00
	24.0	.892+00
I	.0	.888+00
	24.0	.890+00
I	.0	.889+00
	72.0	.889+00
I	.0	.891+00
	72.0	.890+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.890+00
	12.0	.893+00
I	.0	.890+00
	12.0	.893+00
I	.0	.891+00
	24.0	.888+00
I	.0	.888+00
	24.0	.886+00
I	.0	.890+00
	72.0	.890+00
I	.0	.891+00
	72.0	.892+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	EMITTANCE
I	.0	.889+00
	.5	.889+00
I	.0	.891+00
	.5	.890+00
I	.0	.889+00
	2.0	.887+00
I	.0	.887+00
	2.0	.887+00
I	.0	.889+00
	24.0	.886+00
I	.0	.889+00
	24.0	.887+00

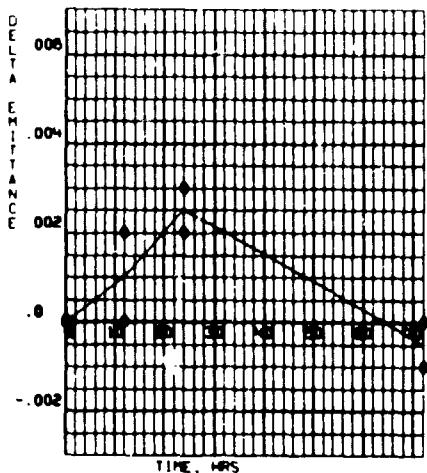
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.889+00
	4.2	.891+00
I	.0	.889+00
	4.2	.891+00
I	.0	.890+00
	150.0	.893+00
I	.0	.889+00
	150.0	.895+00

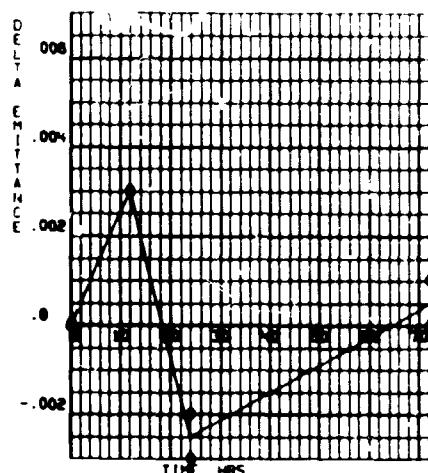
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - WHITE THERMOTROL PAINT(2A-100) ON FIBERGLASS

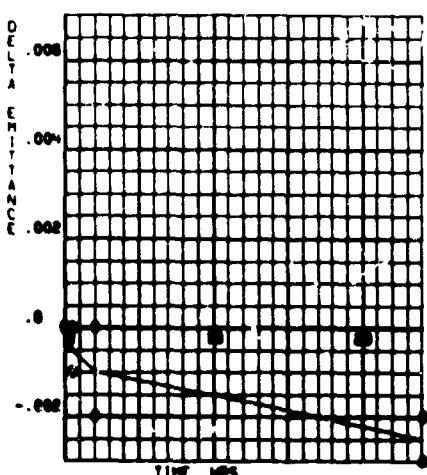
PROPERTY - DELTA EMITTANCE



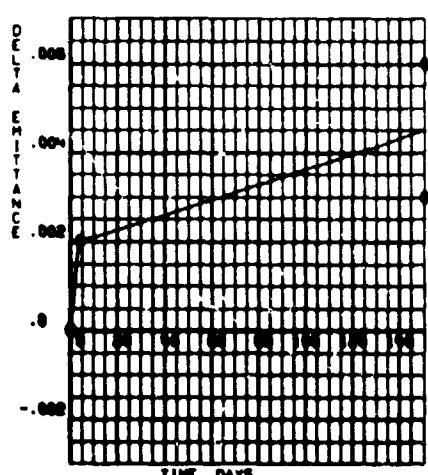
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 T300

MATERIAL -WHITE THERMATHOL PAINT(2A-100) ON FIBERGLASS

PROPERTY -EMITTANCE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.889+00
	4.2	.891+00
I	.0	.890+00
	4.2	.889+00
I	.0	.889+00
	150.0	.888+00
I	.0	.888+00
	150.0	.888+00

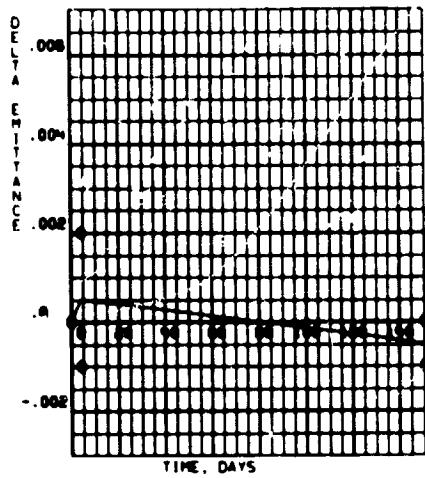
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	EMITTANCE
I		.000	.889+00
		.100-02	.887+00
I		.000	.888+00
		.100-02	.889+00
I		.000	.890+00
		.760+03	SAMPLE DESTROYED
I		.000	.890+00
		.760+03	SAMPLE DESTROYED

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE F+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- WHITE THERMOTROL PAINT(2A-100) ON FIBERGLASS

PROPERTY- DELTA EMITTANCE



ENVIRONMENT (BIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -WHITE THERMATROL PAINT(2-100) ON FIBERGLASS

PROPERTY -ABSORPTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	ABSORPTANCE
I	.0	.164+00
	10.0	.180+00
I	.0	.167+00
	10.0	.180+00
I	.0	.181+00
	150.0	.170+00
I	.0	.174+00
	150.0	.176+00

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.173+00
	24.0	.190+00
I	.0	.182+00
	24.0	.186+00
I	.0	.184+00
	240.0	.175+00
I	.0	.187+00
	240.0	.182+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	ABSORPTANCE
I	-	-	.184+00
	660.	367.	.175+00
I	-	-	.187+00
	660.	367.	.182+00
I	-	-	.183+00
	530.	294.	.177+00
I	-	-	.190+00
	530.	294.	.183+00
I	-	-	.173+00
	140.	78.	.176+00
I	-	-	.185+00
	140.	78.	.189+00
I	-	-	.188+00
	37.	21.	.191+00
I	-	-	.185+00
	37.	21.	.191+00

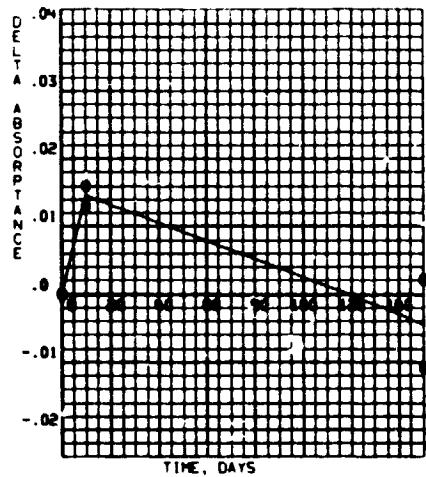
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	ABSORPTANCE
I	.0	.184+00
	24.0	.186+00
I	.0	.183+00
	24.0	.191+00
I	.0	.175+00
	72.0	.184+00
I	.0	.183+00
	72.0	.194+00
I	.0	.161+00
	240.0	.181+00
I	.0	.180+00
	240.0	.196+00

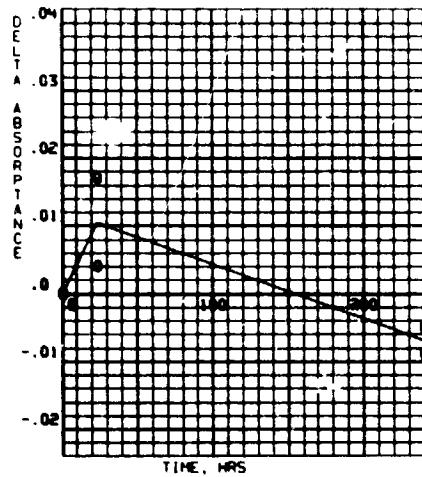
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- WHITE THERMOTROL PAINT(2A-100) ON FIBERGLASS

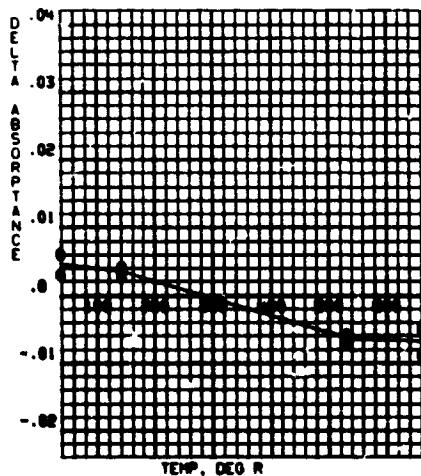
PROPERTY- DELTA ABSORPTANCE



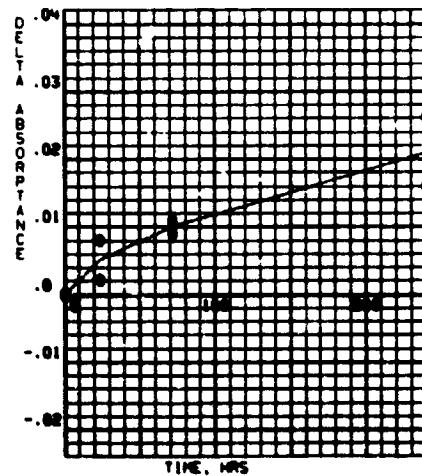
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -WHITE THERMATROL PAINT(2A-100) ON FIBERGLASS

PROPERTY -ABSORPTANCE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.167+00
I	12.0	.171+00
I	.0	.167+00
I	12.0	.178+00
I	.0	.189+00
I	24.0	.199+00
I	.0	.167+00
I	24.0	.187+00
I	.0	.164+00
I	72.0	.173+00
I	.0	.178+00
I	72.0	.181+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.152+00
I	12.0	.185+00
I	.0	.152+00
I	12.0	.182+00
I	.0	.152+00
I	24.0	.194+00
I	.0	.147+00
I	24.0	.189+00
I	.0	.152+00
I	72.0	.186+00
I	.0	.183+00
I	72.0	.189+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.173+00
I	.5	.189+00
I	.0	.202+00
I	.5	.195+00
I	.0	.198+00
I	2.0	.189+00
I	.0	.193+00
I	2.0	.184+00
I	.0	.199+00
I	24.0	.180+00
I	.0	.191+00
I	24.0	.179+00

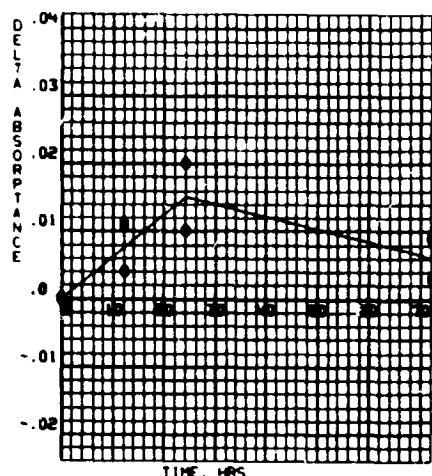
ENVIRONMENT 8 (CD)
GASFOLIS OXYGFN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	ABSORPTANCE
I	.0	.209+00
I	4.2	.191+00
I	.0	.194+00
I	4.2	.170+00
I	.0	.194+00
I	150.0	.204+00
I	.0	.204+00
I	150.0	.209+00

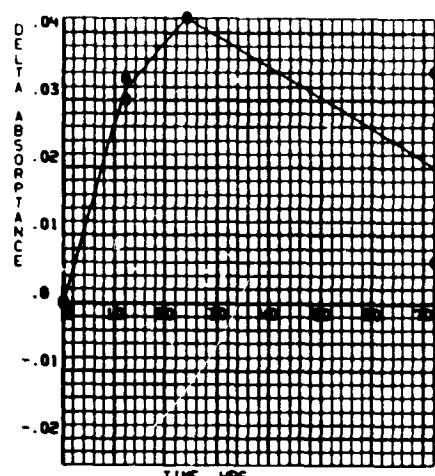
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- WHITE THERMATROL PAINT(2A-100) ON FIBERGLASS

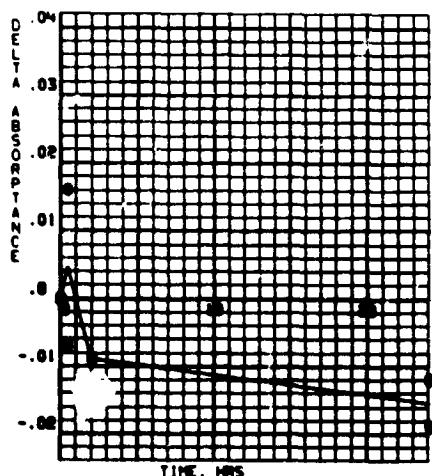
PROPERTY- DELTA ABSORPTANCE



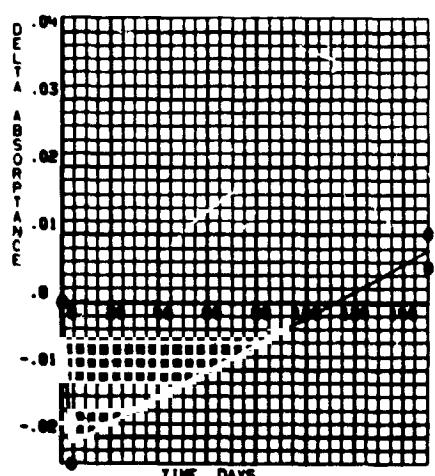
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CO₂)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -WHITE THERMATHOL PAINT(2A-100) ON FIBERGLASS

PROPERTY -ABSORPTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

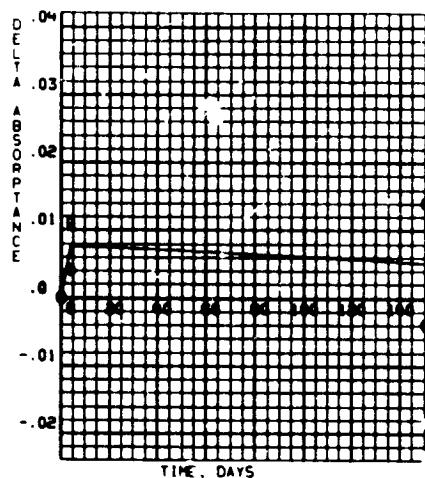
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	DAYs	ABSORPTANCE	F	F	P.P.	TORR	ABSORPTANCE
I	.0	.201+00	I	.000			.196+00
I	4.2	.205+00	I	.100-02			.208+00
I	.0	.194+00	I	.000			.190+00
I	4.2	.205+00	I	.100-02			.201+00
I	.0	.192+00	I	.000			.206+00
I	150.0	.188+00	I	.760+03	SAMPLE DESTROYED		
I	.0	.200+00	I	.000			.194+00
I	150.0	.214+00	I	.760+03	SAMPLE DESTROYED		

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- WHITE THERMOTROL PAINT(2A-100) ON FIBERGLASS

PROPERTY- DELTA ABSORPTANCE



ENVIRONMENT B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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ADHESION TEST RESULTS

Material*: Thermatrol Paint on Fiberglass, TH-F

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0
			660 (366)	240	0
			530 (294)	240	0
			140 (78)	240	0
			37 (21)	240	0
3	200°F (93°C) 40% R.H.			24	0
				72	0
				240	0
5	95% R.H. at 95°F (35°C)			12	0
				24	0
				72	0
6	95% R.H./Salt Air at 95°F(35°C)			12	0
				24	0
				72	0
7	Water Immersion at 70°F (21°C)			0.5	0
				2	0
				24	0
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³		100	0
		10 ⁻³		3600	0
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³		100	0
		10 ⁻³		3600	15/13**
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³		4	0
		760		4	Destroyed in environment

* See Table 5 for complete identification of test material (Volume I).
 ** Two specimens.

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.46230+02
I	10.0	.46220+02
I	.0	.46100+02
I	10.0	.46090+02
I	.0	.46360+02
I	150.0	.46350+02
I	.0	.45660+02
I	150.0	.45650+02

ENVIRONMENT 2 (AH)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.46170+02
I	24.0	.46060+02
I	.0	.45440+02
I	24.0	.45280+02
I	.0	.45790+02
I	240.0	.45710+02
I	.0	.45230+02
I	240.0	.45130+02

ENVIRONMENT 2 (HCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG K	DEG K	GRAMS
I	-	-	.45790+02
I	660.	367.	.45710+02
I	-	-	.45230+02
I	660.	367.	.45130+02
I	-	-	.45430+02
I	530.	294.	.45310+02
I	-	-	.45070+02
I	530.	294.	.45000+02
I	-	-	.45700+02
I	140.	78.	.45590+02
I	-	-	.45650+02
I	140.	78.	.45560+02
I	-	-	.44960+02
I	37.	21.	.44940+02
I	-	-	.46360+02
I	37.	21.	.46290+02

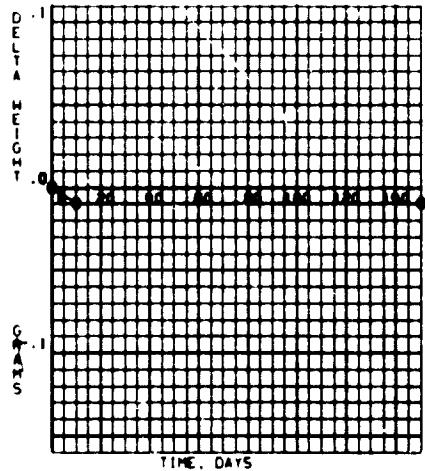
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.45960+02
I	24.0	.45860+02
I	.0	.46080+02
I	24.0	.45990+02
I	.0	.45520+02
I	72.0	.45410+02
I	.0	.47200+02
I	72.0	.47070+02
I	.0	.46300+02
I	240.0	.46170+02
I	.0	.46970+02
I	240.0	.46820+02

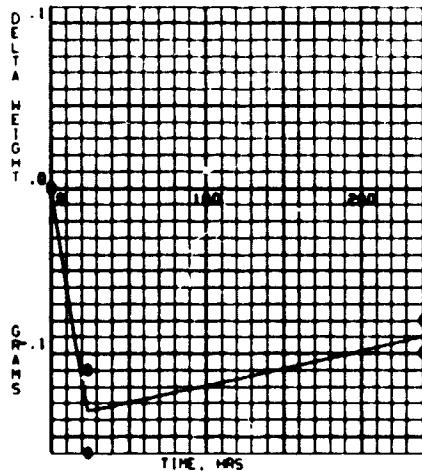
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

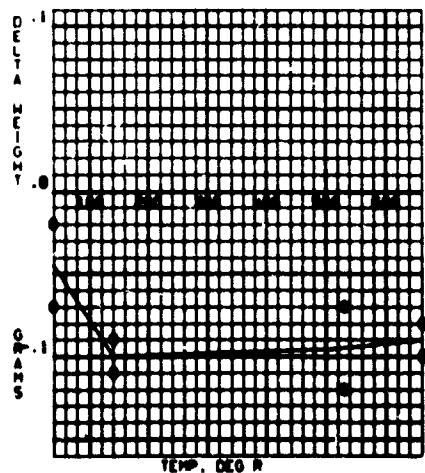
PROPERTY - DELTA HEIGHT



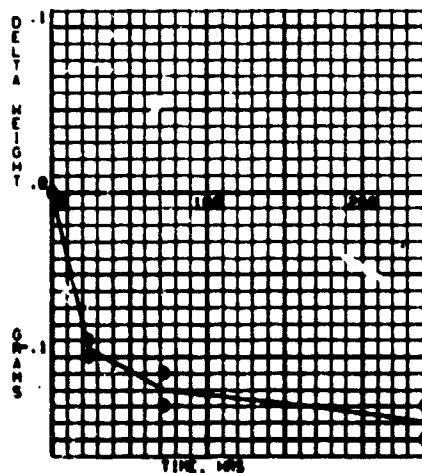
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
	.0	.46130+02
	12.0	.46010+02
	.0	.46100+02
	12.0	.46030+02
	.0	.45640+02
	24.0	.45580+02
	.0	.46150+02
	24.0	.46130+02
	.0	.46700+02
	72.0	.46660+02
	.0	.46180+02
	72.0	.46140+02

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
	.0	.46460+02
	12.0	.46430+02
	.0	.45180+02
	12.0	.45130+02
	.0	.45740+02
	24.0	.45770+02
	.0	.46490+02
	24.0	.46570+02
	.0	.45140+02
	72.0	.45250+02
	.0	.45600+02
	72.0	.45585+02

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	GRAMS
	.0	.45870+02
	.5	.45870+02
	.0	.46340+02
	.5	.46340+02
	.0	.46820+02
	2.0	.46680+02
	.0	.46870+02
	2.0	.46710+02
	.0	.46170+02
	24.0	.46050+02
	.0	.46640+02
	24.0	.46490+02

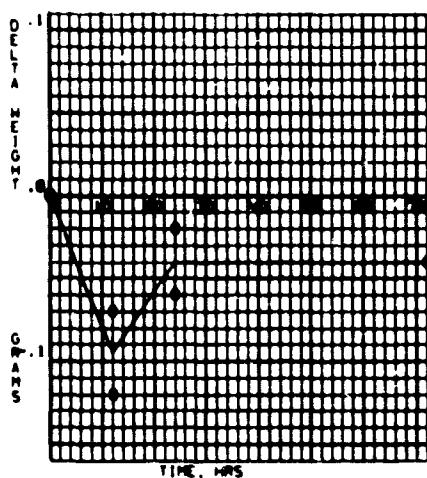
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
	.0	.45610+02
	1.2	.45560+02
	.0	.46580+02
	4.2	.46480+02
	.0	.46910+02
	150.0	.46880+02
	.0	.46600+02
	150.0	.46560+02

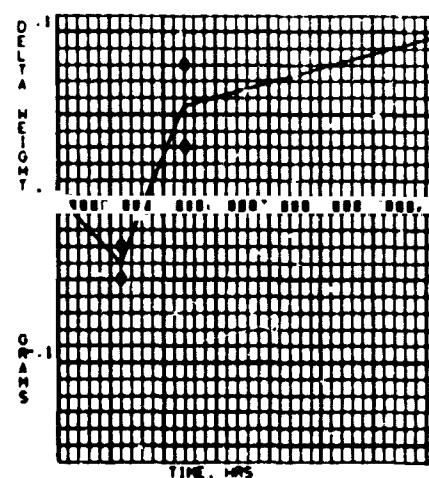
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT (SERIES 400) ON ALUMINUM

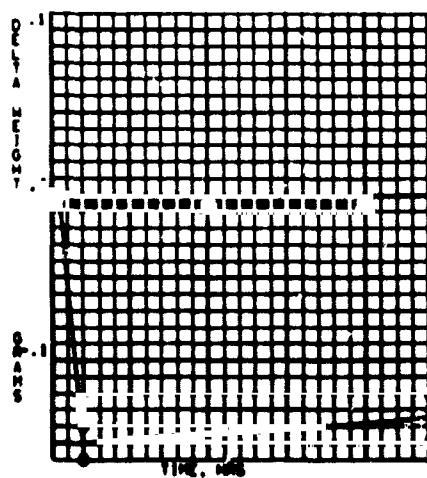
PROPERTY - DELTA WEIGHT



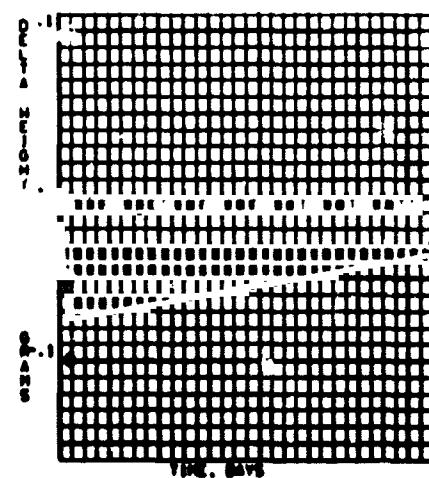
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8 (1000)
GASEOUS CHLORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - WEIGHT

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.45760+02
I	4.2	.45710+02
I	.0	.44850+02
I	4.2	.44800+02
I	.0	.45640+02
	150.0	.45500+02
I	.0	.45760+02
	150.0	.45660+02

ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C) 4 HR

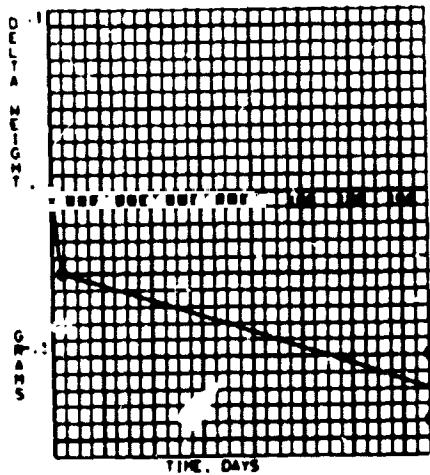
F	F	P.P.	TORR	GRAMS
I		.000		.45230+02
I		.100-02		.45220+02
I		.000		.46110+02
I		.100-02		.46090+02
I		.000		.45490+02
		.760+03	SAMPLE DESTROYED	
I		.000		.45010+02
		.760+03	SAMPLE DESTROYED	

NOTE.

- SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
- ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE \pm 2 PERCENT
- THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
- THE E+01 ETC. IS THE EXPONENT OF 10
- THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT (SERIES 400) ON ALUMINUM

PROPERTY - DELTA HEIGHT



ENVIRONMENT (BRIEF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORN

505

LOCKHEED MISSILES & SPACE COMPANY

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - EMITTANCE

ENVIRONMENT 1			ENVIRONMENT 2 (AB)		
CONTROL, 70 DEG F (21 DEG C)			VACUUM, 1.E-06 TORR, 200 DEG F (93 DEG C)		
F	DAYS	EMITTANCE	F	HOURS	EMITTANCE
I	.0	.901+00	I	.0	.910+00
I	10.0	.901+00	I	24.0	.909+00
I	.0	.901+00	I	.0	.910+00
I	10.0	.902+00	I	24.0	.909+00
I	.0	.902+00	I	.0	.908+00
I	150.0	.906+00	I	240.0	.908+00
I	.0	.906+00	I	.0	.903+00
I	150.0	.913+00	I	240.0	.903+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

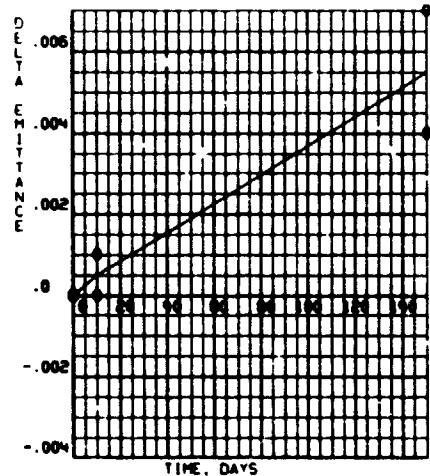
F	DEG K	DEG K	EMITTANCE
I	-	-	.908+00
I	660.	367.	.908+00
I	-	-	.903+00
I	660.	367.	.903+00
I	-	-	.903+00
I	530.	294.	.909+00
I	-	-	.905+00
I	530.	294.	.909+00
I	-	-	.907+00
I	140.	78.	.905+00
I	-	-	.908+00
I	140.	78.	.907+00
I	-	-	.901+00
I	37.	21.	.904+00
I	-	-	.908+00
I	37.	21.	.910+00

NOTE.

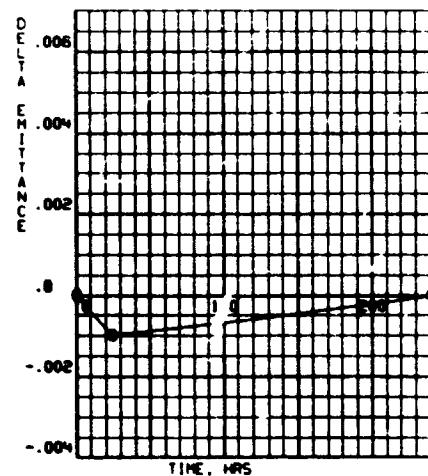
- SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS (VOL 1)
- ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
- THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
- THE E+01 ETC. IS THE EXPONENT OF 10
- THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT (SERIES 400) ON ALUMINUM

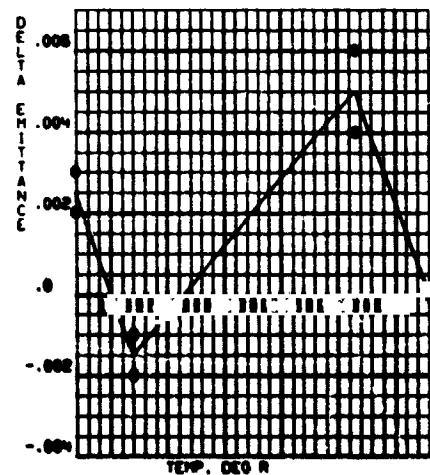
PROPERTY - DELTA EMITTANCE



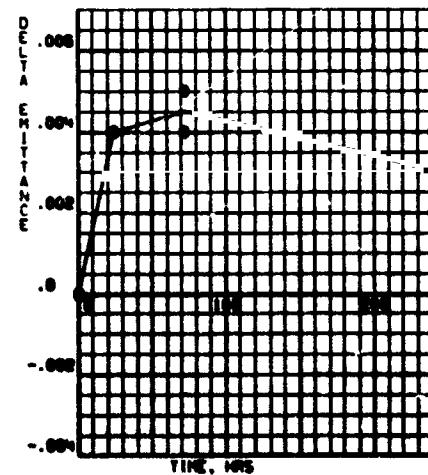
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) NO PERCENT R.H.

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - EMITTANCE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	EMITTANCE
I	.0	.902+00
	12.0	.904+00
I	.0	.902+00
	12.0	.904+00
I	.0	.900+00
	24.0	.902+00
I	.0	.901+00
	24.0	.902+00
I	.0	.902+00
	72.0	.901+00
I	.0	.902+00
	72.0	.902+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
I	.0	.904+00
	12.0	.909+00
I	.0	.900+00
	12.0	.906+00
I	.0	.901+00
	24.0	.900+00
I	.0	.904+00
	24.0	.900+00
I	.0	.899+00
	72.0	.904+00
I	.0	.900+00
	72.0	.903+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

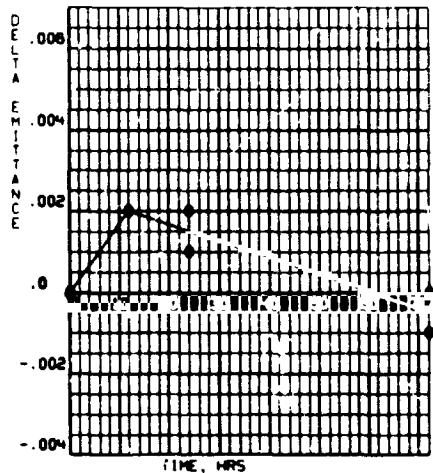
F	HOURS	EMITTANCE
I	.0	.900+00
	.5	.901+00
I	.0	.902+00
	.5	.903+00
I	.0	.903+00
	2.0	.903+00
I	.0	.902+00
	2.0	.903+00
I	.0	.905+00
	24.0	.904+00
I	.0	.907+00
	24.0	.906+00

ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
I	.0	.905+00
	4.2	.908+00
I	.0	.903+00
	4.2	.906+00
I	.0	.903+00
	150.0	.907+00
I	.0	.902+00
	150.0	.904+00

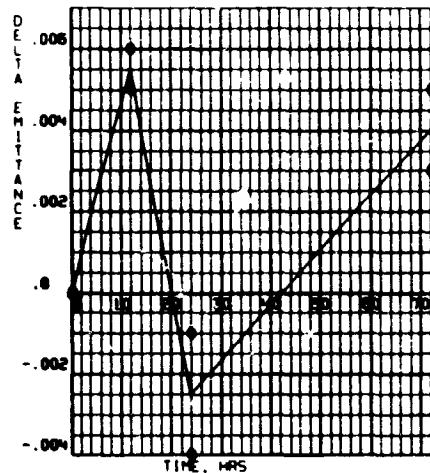
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

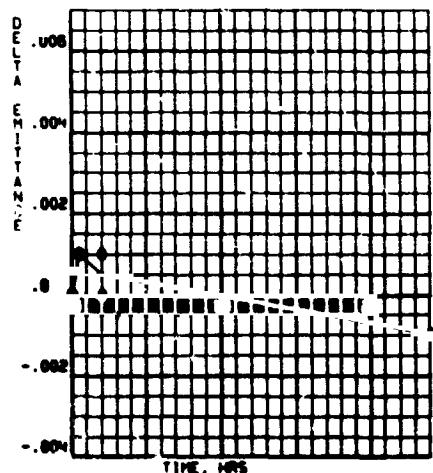


ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

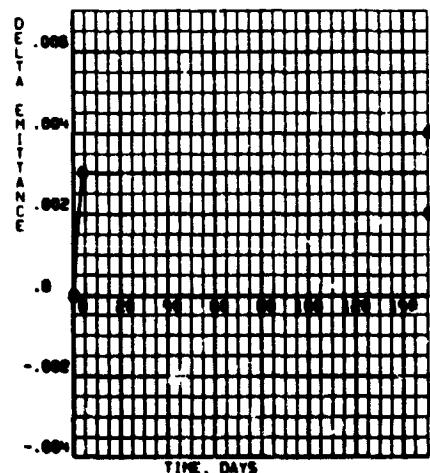
PROPERTY - DELTA EMISSANCE



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - 3M BLACK VELVET PAINT(SERIFS 400) ON ALUMINUM

PROPERTY -EMITTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.902+00
	4.2	.904+00
	.0	.902+00
	4.2	.903+00
	.0	.906+00
	150.0	.906+00
	.0	.909+00
	150.0	.910+00

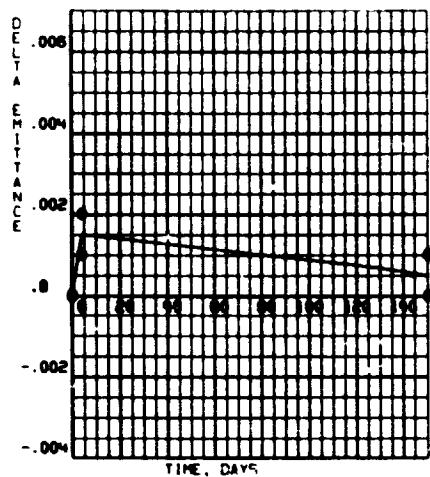
ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P. TORR	EMITTANCE
	.000		.906+00
	.100-02		.903+00
	.000		.904+00
	.100-02		.902+00
	.000		.904+00
	.760+03	SAMPLE DESTROYED	
	.000		.902+00
	.760+03	SAMPLE DESTROYFD	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
.THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - DELTA EMITTANCE



ENVIRONMENT - B(EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - ABSORPTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	ABSORPTANCE
	.0	.975+00
	10.0	.966+00
	.0	.970+00
	10.0	.967+00
	.0	.970+00
	150.0	.968+00
	.0	.970+00
	150.0	.973+00

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	ABSORPTANCE
	.0	.970+00
	24.0	.970+00
	.0	.970+00
	24.0	.970+00
	.0	.975+00
	240.0	.970+00
	.0	.970+00
	240.0	.970+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	ABSORPTANCE
	-	-	.975+00
	660.	367.	.970+00
	-	-	.970+00
	660.	367.	.970+00
	-	-	.970+00
	530.	294.	.976+00
	-	-	.970+00
	530.	294.	.976+00
	-	-	.972+00
	140.	78.	.972+00
	-	-	.975+00
	140.	78.	.970+00
	-	-	.970+00
	37.	21.	.971+00
	-	-	.973+00
	37.	21.	.974+00

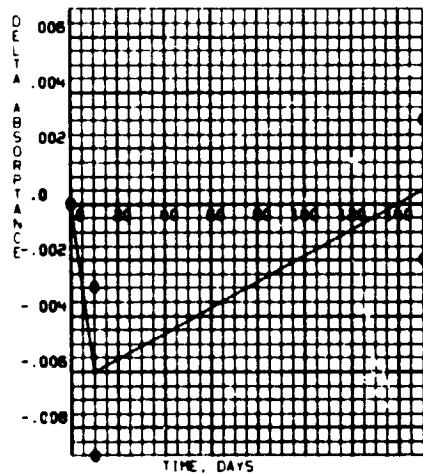
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	ABSORPTANCE
	.0	.970+00
	24.0	.972+00
	.0	.970+00
	24.0	.972+00
	.0	.970+00
	72.0	.972+00
	.0	.970+00
	72.0	.973+00
	.0	.970+00
	240.0	.973+00
	.0	.975+00
	240.0	.973+00

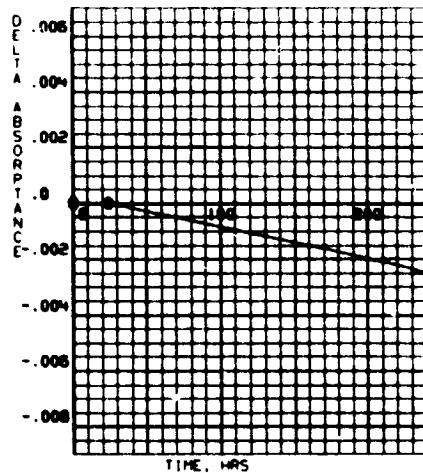
NOTE. • SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
• ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
• THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE F+01 ETC., IS THE EXPONENT OF 10
• THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

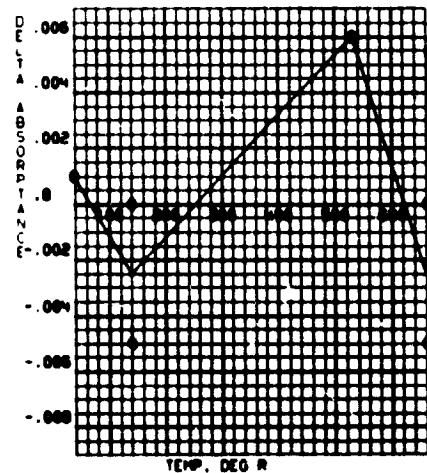
PROPERTY - DELTA ABSORPTANCE



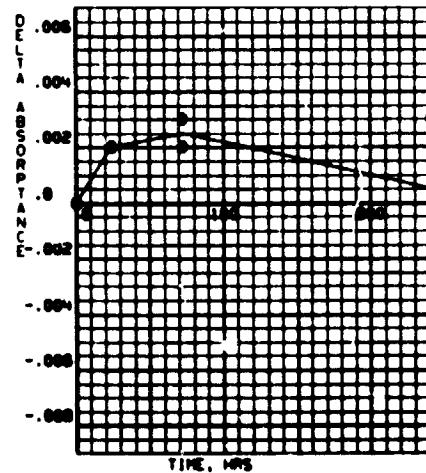
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(CD)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - ABSORPTANCE

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	ABSORPTANCE
	.0	.968+00
	12.0	.974+00
	.0	.970+00
	12.0	.975+00
	.0	.970+00
	24.0	.975+00
	.0	.973+00
	24.0	.975+00
	.0	.970+00
	72.0	.968+00
	.0	.970+00
	72.0	.968+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	ABSORPTANCE
	.0	.970+00
	12.0	.972+00
	.0	.970+00
	12.0	.975+00
	.0	.970+00
	24.0	.970+00
	.0	.970+00
	24.0	.970+00
	.0	.970+00
	72.0	.970+00
	.0	.970+00
	72.0	.966+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	ABSORPTANCE
	.0	.970+00
	.5	.970+00
	.0	.970+00
	.5	.970+00
	.0	.970+00
	2.0	.970+00
	.0	.970+00
	2.0	.975+00
	.0	.970+00
	24.0	.972+00
	.0	.970+00
	24.0	.975+00

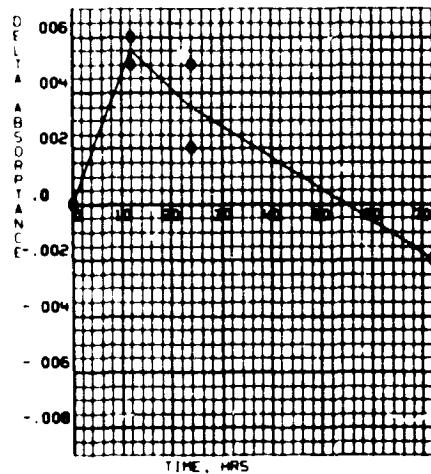
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	ABSORPTANCE
	.0	.972+00
	4.2	.964+00
	.0	.972+00
	4.2	.973+00
	.0	.970+00
	150.0	.972+00
	.0	.970+00
	150.0	.975+00

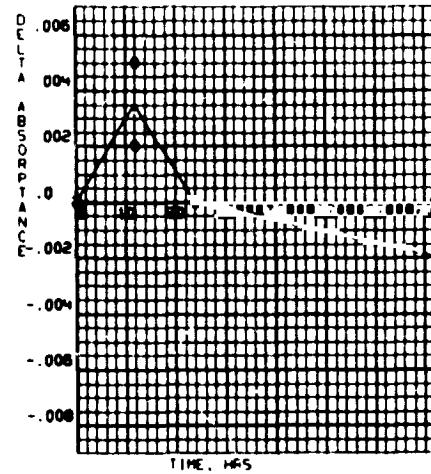
NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

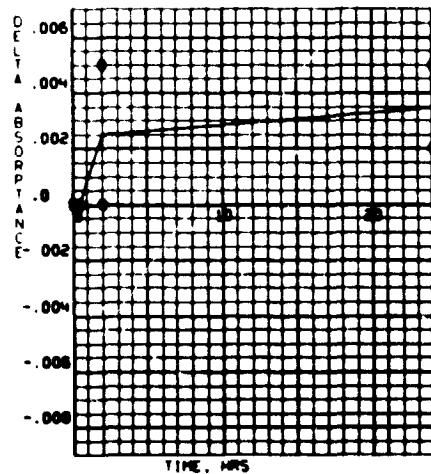
PROPERTY- DELTA ABSORPTANCE



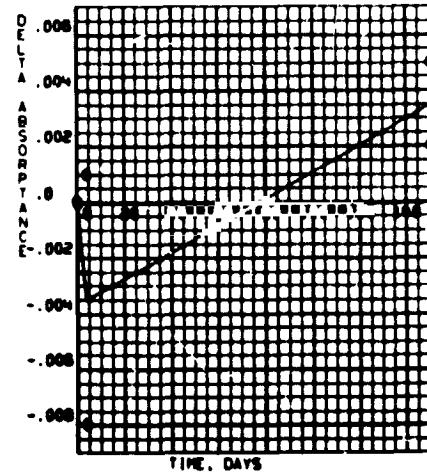
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON ALUMINUM

PROPERTY - ABSORPTANCE

ENVIRONMENT 8 (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

ENVIRONMENT 8 (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C), 4 HR

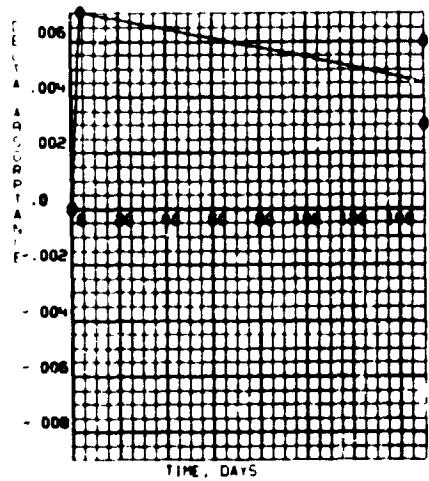
F	DAYS	ABSORPTANCE
	.0	.973+00
	4.2	.980+00
	.0	.971+00
	4.2	.978+00
	.0	.973+00
	150.0	.976+00
	.0	.970+00
	150.0	.976+00

F	F	P.P.	TORR	ABSORPTANCE
	.	.000		.972+00
	.	.100-02		.976+00
	.	.000		.970+00
	.	.100-02		.974+00
	.	.000		.974+00
	.	.760+03	SAMPLE DESTROYED	
	.	.000		.767+00
	.	.760+03	SAMPLE DESTROYED	

NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: 3M BLACK VELVET PAINT(SERIES HUG) ON ALUMINUM

PROPERTY: DELTA ABSORPTANCE



ENVIRONMENT: BIEF
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

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ADHESION TEST RESULTS

Material*: Series 400 Black Paint on Aluminum, BL-A

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R(°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr	O ₂ or F ₂ Partial Press., Torr	660 (366)	24	0
			660 (366)	240	0
			550 (294)	240	0
			140 (78)	240	0
			37 (21)	240	0/.5**
3	200°F (93°C) 40% R.H.	O ₂ or F ₂ Partial Press., Torr	24	0	0
			72	0	0
			240	0	0
5	95% R.H. at 95°F (35°C)	O ₂ or F ₂ Partial Press., Torr	12	0	0
			24	0	0
			72	0	0
6	95% R.H./Salt Air at 95°F(35°C)	O ₂ or F ₂ Partial Press., Torr	12	0	0
			24	0	0
			72	0	0
7	Water Immersion at 70°F (21°C)	O ₂ or F ₂ Partial Press., Torr	0.5	0	0
			2	0	0
			24	0	0
8e, d	Gaseous Oxygen at 70°F (21°C)	10^{-3}	100	0	0
			3600	0	0
			100	0	0
8e, f	Gaseous Fluorine at 70°F (21°C)	10^{-3}	3600	0/.005**	0/.005**
			100	0	0
			4	0/.001**	0/.001**
8e, h	95% R.H./F ₂ at 95°F (35°C)	10^{-3}	4	Destroyed in environment	Destroyed in environment
			760		

* See Table 5 for complete identification of test material (Volume I).

**Two specimens.

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BLACK VELVET PAINT(SERIES 400)
ON ALUMINUM

ENVIRONMENT 2B

VACUUM, 10E-06 TORR, 660 DEG.R (365 DEG.K)

TEST DATE 031671

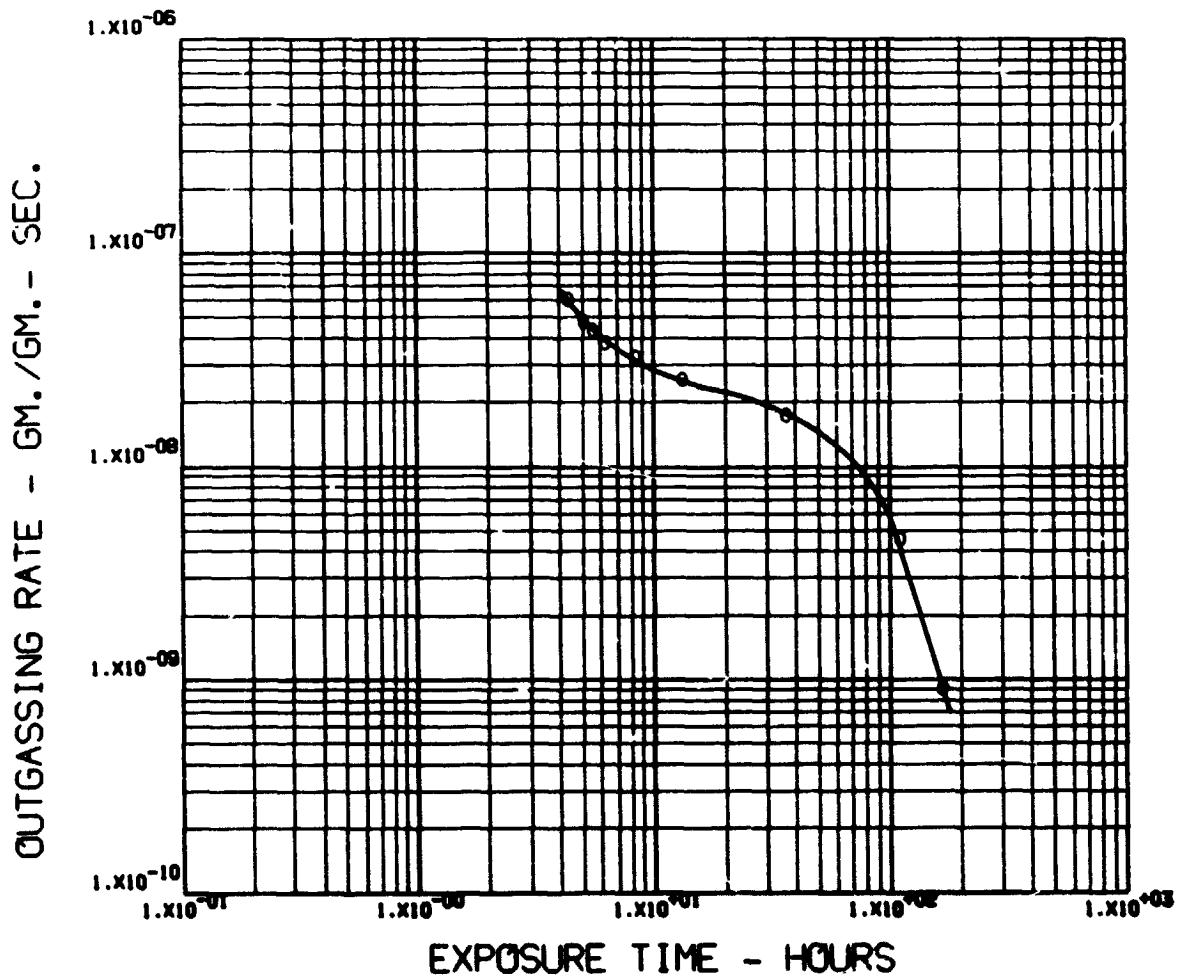
TEST CHAMBER NO. 2

SAMPLE WEIGHT = 1.1655 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
4.33	6.00-08	.44	.52	.05
5.00	4.72-08	.71	.22	.07
5.50	4.31-08	.74	.19	.07
6.25	3.76-08	.71	.22	.07
8.36	3.23-08	.72	.21	.07
13.08	2.54-08	.51	.44	.04
36.33	1.72-08	.80	.16	.04
110.00	4.55-09	.79	.17	.04
166.00	8.93-10	.86	.10	.04

PROPERTY- OUTGASSING

MATERIAL- BLACK VELVET PAINT(SERIES 400) ON
ALUMINUM



ENVIRONMENT 2B VACUUM. 10⁻⁶ TORR. 660 DEG. R. (365 DEG. K.)

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LOCKHEED MISSILES & SPACE COMPANY

PROPERTY = OUTGASSING BEHAVIOR

MATERIAL = BLACK VELVET PAINT (SERIES 400)
ON ALUMINUM

ENVIRONMENT 2C

VACUUM, 10E-06 TORR, 530 DEG.R (295 DEG.K)

TEST DATE 022471

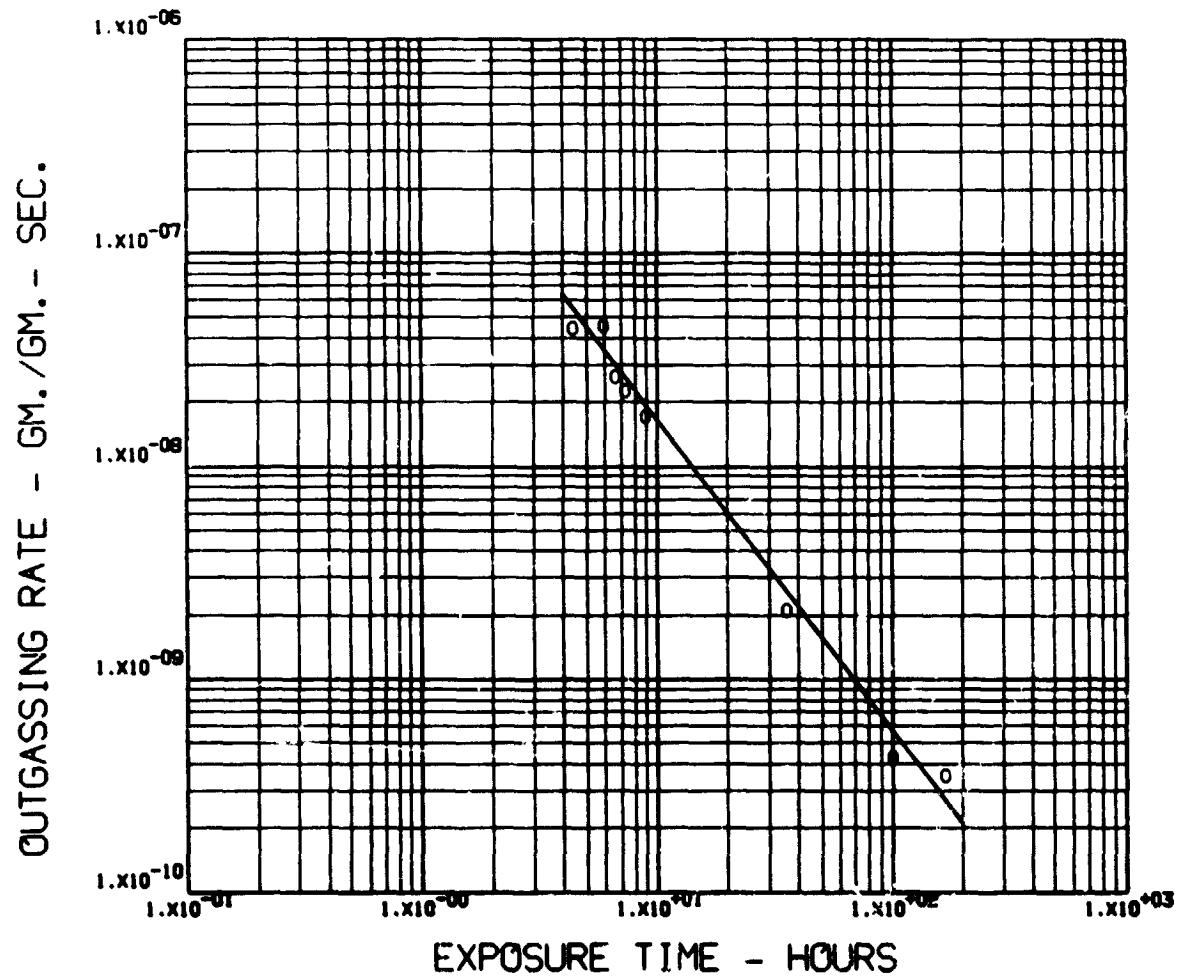
TEST CHAMBER NO. 3

SAMPLE WEIGHT = 2.8420 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
4.38	4.40-08	.89	.09	.02
5.88	4.49-08	.88	.10	.02
6.57	2.60-08	.88	.10	.02
7.25	2.25-08	.88	.10	.02
8.88	1.70-08	.88	.10	.02
35.22	2.07-09	.88	.10	.02
100.47	4.26-10	.82	.15	.03
167.47	3.48-10	.78	.19	.03

PROPERTY- OUTGASSING

MATERIAL- BLACK VELVET PAINT(SERIES 400) ON
ALUMINUM



ENVIRONMENT 2C VACUUM, 10⁻⁶ TORR, 530 DEG. R. (295 DEG. K.)

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LOCKHEED MISSILES & SPACE COMPANY

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BLACK VELVET PAINT(SERIES 400)
ON ALUMINUM

ENVIRONMENT 4A

VACUUM, 1.0E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

TEST DATE 061272

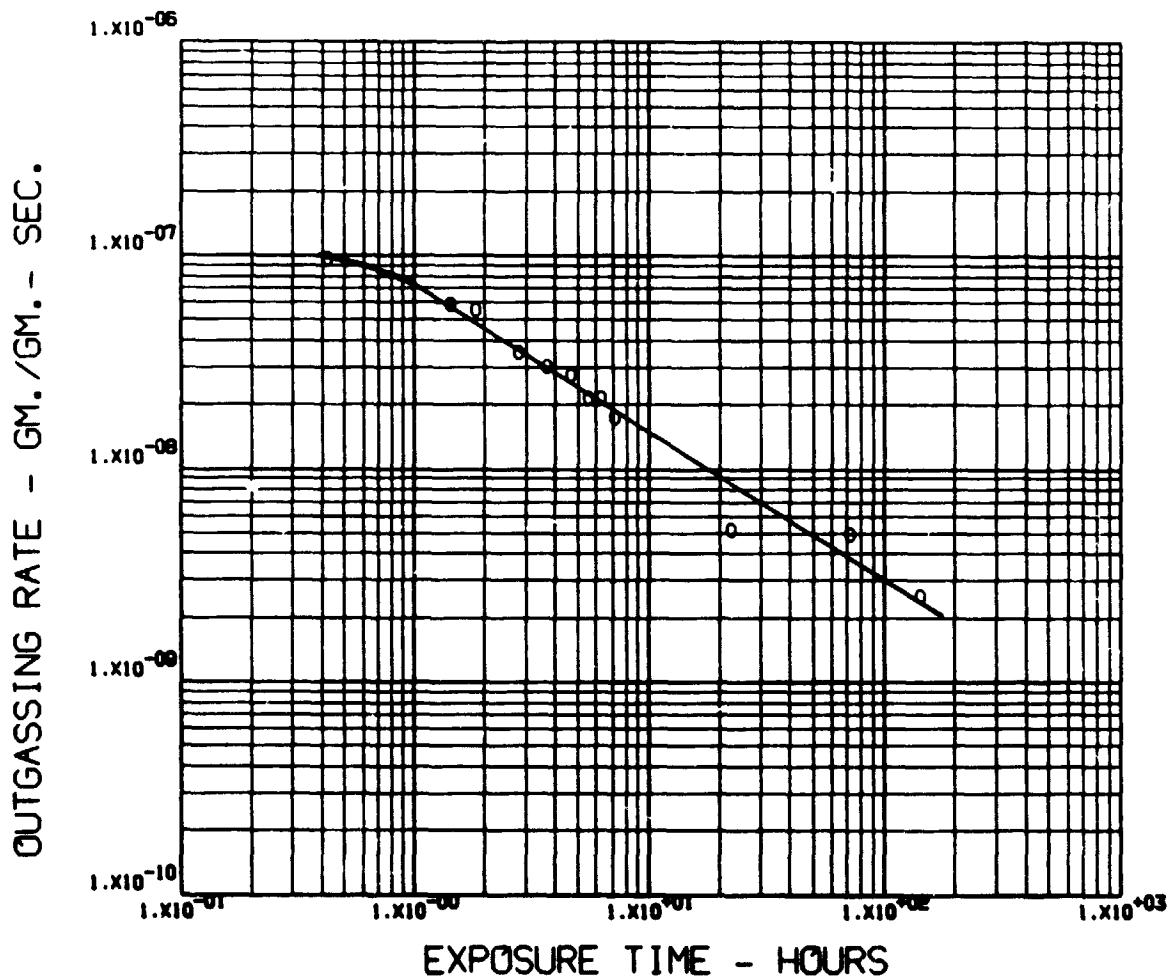
TEST CHAMBER NO. 4

SAMPLE WEIGHT = 1.2370 GMS. SAMPLE AREA = 77. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.42	9.57-08	.88	.12	.00
1.42	5.82-08	.56	.01	.43
1.82	5.48-08	.36	.01	.63
2.75	3.49-08	.64	.00	.36
3.67	3.01-08	.61	.01	.38
4.59	2.74-08	.54	.00	.46
5.50	2.14-08	.71	.01	.29
6.25	2.14-08	.71	.00	.29
7.09	1.72-08	.69	.00	.30
22.34	5.16-09	.85	.01	.14
71.00	4.90-09	.98	.02	.00
142.67	2.52-09	.97	.03	.00

PROPERTY- OUTGASSING

MATERIAL- BLACK VELVET PAINT(SERIES 400) ON
ALUMINUM



ENVIRONMENT 4A VACUUM. 10-6 TORR. 660 DEG. R. (366 DEG. K.
) FOR 6 HRS. FOLLOWED BY GASEOUS HELIUM PURGE AT 760 TORR.
530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSI
NG TESTS AT 530 DEG. R. (294 DEG. K.)

PROPERTY - OUTGASSING BEHAVIOR

MATERIAL - BLACK VELVET PAINT(SERIES 400)
ON ALUMINUM

ENVIRONMENT 4B

VACUUM, 10E-06 TORR, 660 DEG.R.(366 DEG.K) FOR 6HRS, FOLLOWED BY
GASEOUS HELIUM PURGE AT 760 TORR, 530 DEG.R.(294 DEG.K), FOR
4HRS, FOLLOWED BY OUTGASSING TESTS AT 530 DEG.R.(294 DEG.K)

TEST DATE 100471

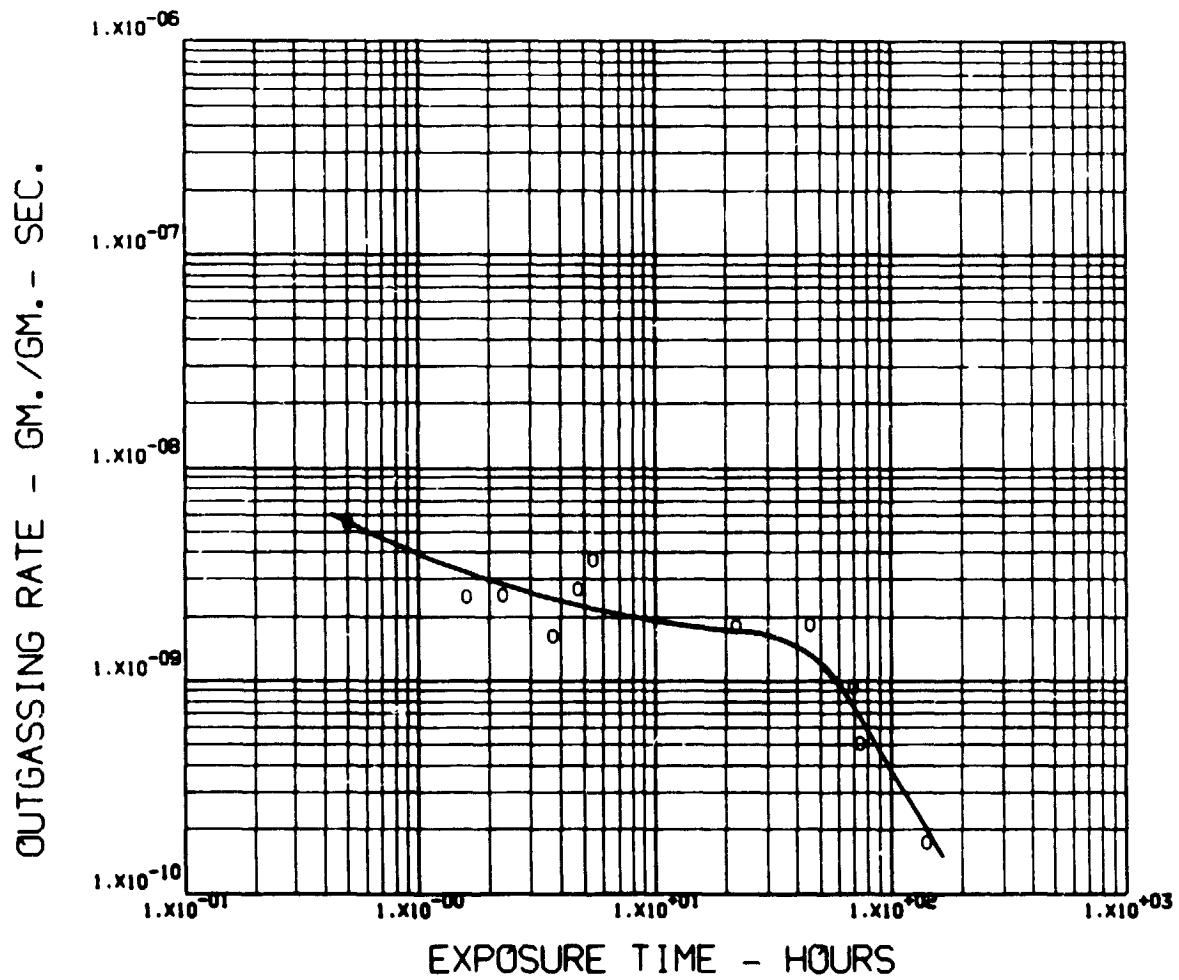
TEST CHAMBER NO. 1

SAMPLE WEIGHT = 2.4395 GMS. SAMPLE AREA = 155. SQ.CM.

EXPOSURE TIME HRS.	OUTGASSING RATE GM./GM.-SEC.	GAS COMPONENT FRACTIONS		
		H2O	N2	CO2
.50	5.48-09	.10	.34	.56
1.58	2.46-09	.14	.47	.40
2.25	2.49-09	.14	.40	.46
3.67	1.60-09	.13	.39	.48
4.67	2.66-09	.14	.51	.35
5.42	3.65-09	.12	.43	.46
21.83	1.79-09	.17	.39	.44
45.00	1.81-09	.09	.53	.38
68.83	9.28-10	.08	.44	.48
73.83	4.99-10	.08	.44	.48
140.25	1.71-10	.11	.50	.39

PROPERTY - OUTGASSING

MATERIAL - BLACK VELVET PAINT (SERIES 400) ON
ALUMINUM



ENVIRONMENT 4B VACUUM, 10⁻⁶ TORR, 660 DEG. R. (366 DEG. K.) FOR 6 HRS. FOLLOWED BY GASEOUS NITROGEN PURGE AT 760 TORR, 530 DEG. R. (294 DEG. K.) FOR 4 HRS. FOLLOWED BY OUTGASSING TESTS AT 530 DEG. R. (294 DEG. K.)

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - WEIGHT

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	GRAMS
I	.0	.26680+02
I	10.0	.26680+02
I	.0	.27290+02
I	10.0	.27290+02
I	.0	.26180+02
I	150.0	.26170+02
I	.0	.26990+02
I	150.0	.26990+02

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	GRAMS
I	.0	.26530+02
I	24.0	.26310+02
I	.0	.26220+02
I	24.0	.26030+02
I	.0	.26120+02
I	240.0	.26020+02
I	.0	.25990+02
	240.0	.25890+02

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	GRAMS
I	-	-	.26120+02
I	660.	367.	.26020+02
I	-	-	.25990+02
I	660.	367.	.25890+02
I	-	-	.25560+02
I	530.	294.	.25320+02
I	-	-	.26140+02
I	530.	294.	.26000+02
I	-	-	.24970+02
I	140.	78.	.24690+02
I	-	-	.25730+02
I	140.	78.	.25630+02
I	-	-	.25700+02
I	37.	21.	.25650+02
I	-	-	.25350+02
I	37.	21.	.25290+02

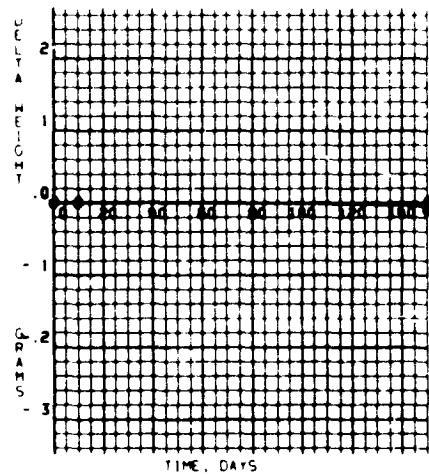
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	GRAMS
I	.0	.25030+02
I	24.0	.24960+02
I	.0	.27170+02
I	24.0	.27080+02
I	.0	.26390+02
I	72.0	.26290+02
I	.0	.26590+02
I	72.0	.26500+02
I	.0	.25440+02
I	240.0	.25370+02
I	.0	.25410+02
	240.0	.25320+02

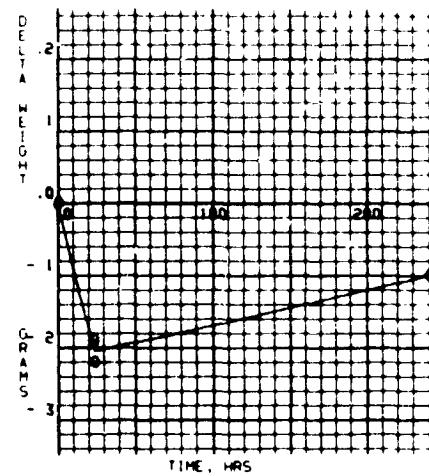
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: 3M BLACK VELVET PAINT (SERIES 400) ON FIBERGLASS

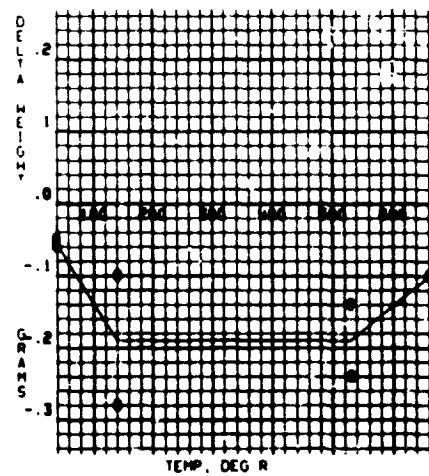
PROPERTY: DELTA HEIGHT



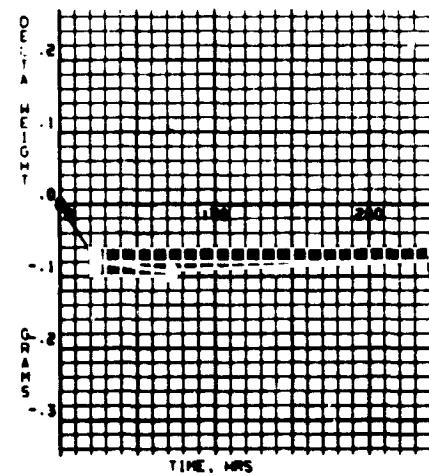
ENVIRONMENT 1
CONTROL 70 DEG F (21 DEG C)



ENVIRONMENT 2(A)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(B-CDE)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - 3M BLACK VELVET PAINT(SERIFS 400) ON FIBERGLASS

PROPERTY - WEIGHT

ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)

F	HOURS	GRAMS
I	.0	.25900+02
	12.0	.25690+02
I	.0	.25860+02
	12.0	.25740+02
I	.0	.26710+02
	24.0	.26640+02
I	.0	.26960+02
	24.0	.26690+02
I	.0	.27260+02
	72.0	.27250+02
I	.0	.26600+02
	72.0	.26600+02

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	GRAMS
I	.0	.25760+02
	12.0	.25770+02
I	.0	.26330+02
	12.0	.26345+02
I	.0	.27240+02
	24.0	.27310+02
I	.0	.26370+02
	24.0	.26460+02
I	.0	.26490+02
	72.0	.26670+02
I	.0	.25490+02
	72.0	.25760+02

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	GRAMS
I	.0	.25900+02
	.5	.25920+02
I	.0	.25260+02
	.5	.25280+02
I	.0	.26520+02
	2.0	.26537+02
I	.0	.26770+02
	2.0	.26787+02
I	.0	.26790+02
	24.0	.26630+02
I	.0	.27070+02
	24.0	.26720+02

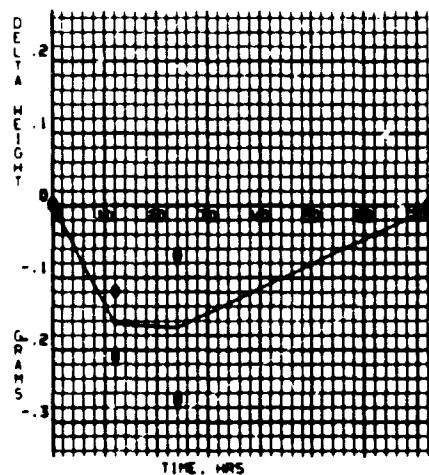
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	GRAMS
I	.0	.26730+02
	4.2	.26600+02
I	.0	.27680+02
	4.2	.27520+02
I	.0	.26570+02
	150.0	.26450+02
I	.0	.27650+02
	150.0	.27490+02

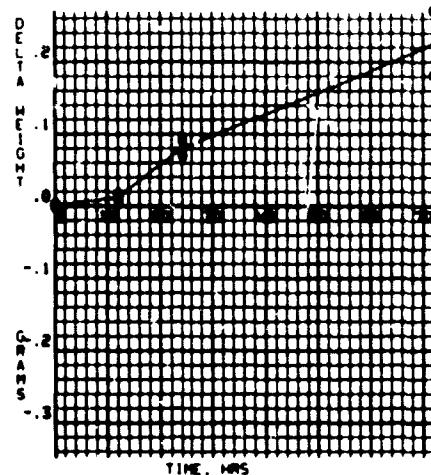
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

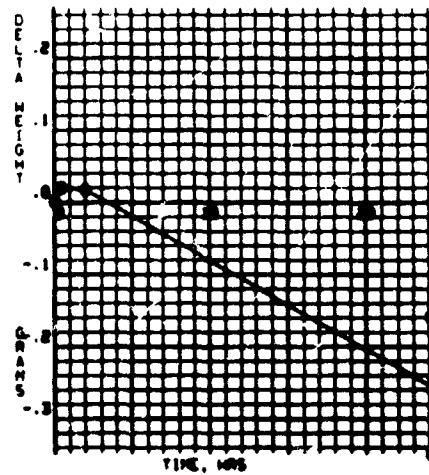
PROPERTY - DELTA HEIGHT



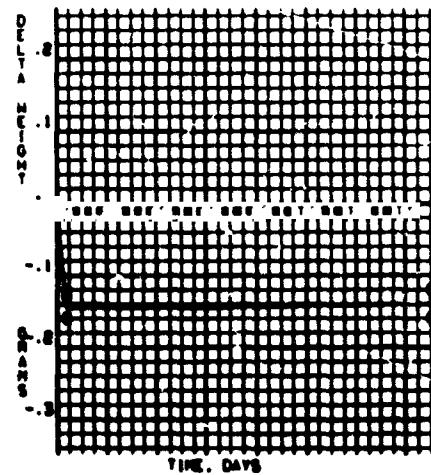
ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8
GASOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - WEIGHT

ENVIRONMENT A (EF)
GASFOAM FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	U.DAYS	GRAMS
1	.0	.27330+02
	4.2	.27200+02
1	.0	.26720+02
	4.2	.26620+02
1	.0	.25730+02
	150.0	.25570+02
1	.0	.26170+02
	150.0	.26000+02

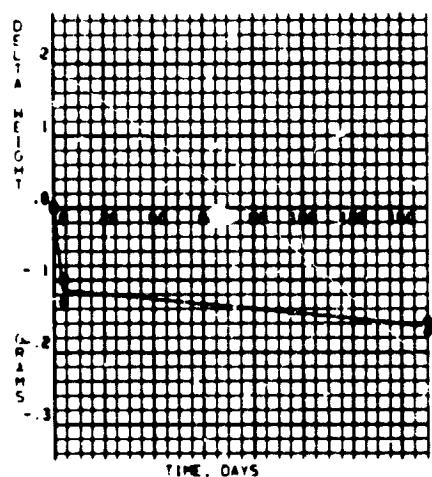
ENVIRONMENT B (GH)
95 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	GRAMS
1		.000		.25940+02
		.100+02		.25930+02
1		.000		.25790+02
		.100+02		.25750+02
1		.000		.26260+02
		.760+03	SAMPLE DESTROYED	
1		.000		.26100+02
		.760+03	SAMPLE DESTROYED	

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- 2 PERCENT
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH 1 IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - DELTA HEIGHT



ENVIRONMENT: BIEF
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

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LOCKHEED MISSILES & SPACE COMPANY

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - EMITTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYs	EMITTANCE
I	.0	.910+00
I	10.0	.911+00
I	.0	.911+00
I	10.0	.912+00
I	.0	.914+00
I	150.0	.918+00
I	.0	.903+00
I	150.0	.907+00

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	EMITTANCE
I	.0	.907+00
I	24.0	.905+00
I	.0	.903+00
I	24.0	.902+00
I	.0	.900+00
I	240.0	.901+00
I	.0	.901+00
I	240.0	.903+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	EMITTANCE
I	-	-	.900+00
I	660.	367.	.901+00
I	-	-	.901+00
I	660.	367.	.903+00
I	-	-	.905+00
I	530.	294.	.911+00
I	-	-	.902+00
I	530.	294.	.909+00
I	-	-	.902+00
I	140.	78.	.902+00
I	-	-	.902+00
I	140.	78.	.902+00
I	-	-	.902+00
I	37.	21.	.906+00
I	-	-	.903+00
I	37.	21.	.906+00

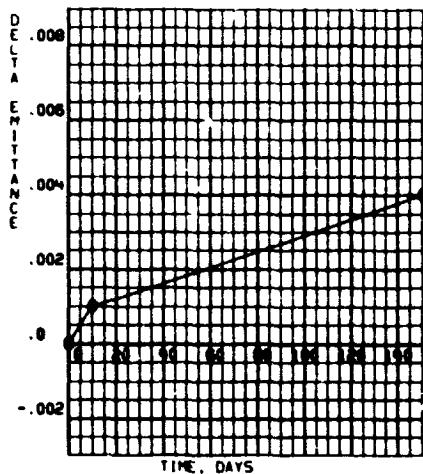
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	EMITTANCE
I	.0	.902+00
I	24.0	.906+00
I	.0	.904+00
I	24.0	.910+00
I	.0	.905+00
I	72.0	.910+00
I	.0	.903+00
I	72.0	.907+00
I	.0	.906+00
I	240.0	.909+00
I	.0	.903+00
I	240.0	.906+00

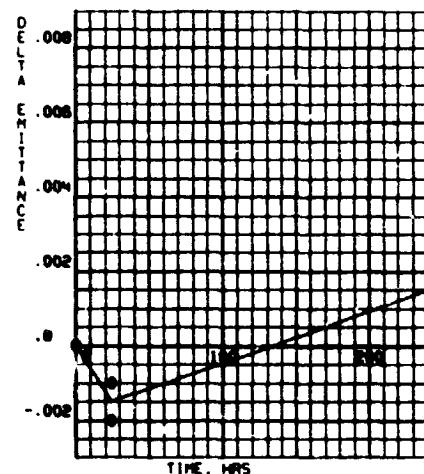
NOTE. SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
. ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
. THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
. THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

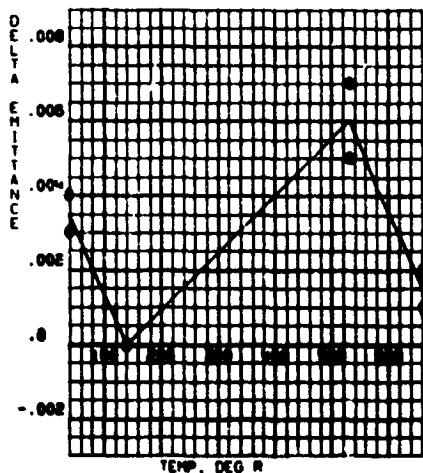
PROPERTY - DELTA EMITTANCE



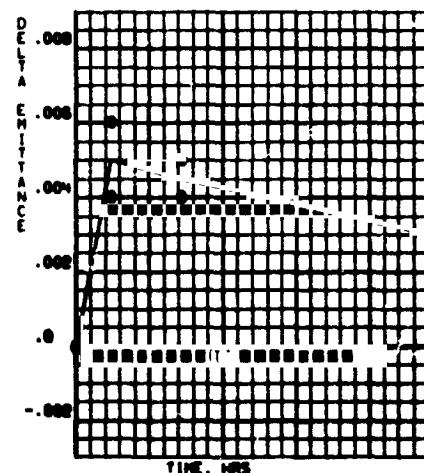
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(a)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(bcd)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL -7M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY -EMITTANCE

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	EMITTANCE
	.0	.905+00
	12.0	.906+00
	.0	.906+00
	12.0	.906+00
	.0	.904+00
	24.0	.904+00
	.0	.904+00
	24.0	.904+00
	.0	.906+00
	72.0	.903+00
	.0	.903+00
	72.0	.901+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	EMITTANCE
	.0	.905+00
	12.0	.908+00
	.0	.906+00
	12.0	.909+00
	.0	.905+00
	24.0	.908+00
	.0	.905+00
	24.0	.909+00
	.0	.903+00
	72.0	.907+00
	.0	.904+00
	72.0	.907+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	EMITTANCE
	.0	.906+00
	.5	.908+00
	.0	.903+00
	.5	.901+00
	.0	.905+00
	2.0	.905+00
	.0	.904+00
	2.0	.904+00
	.0	.903+00
	24.0	.904+00
	.0	.901+00
	24.0	.905+00

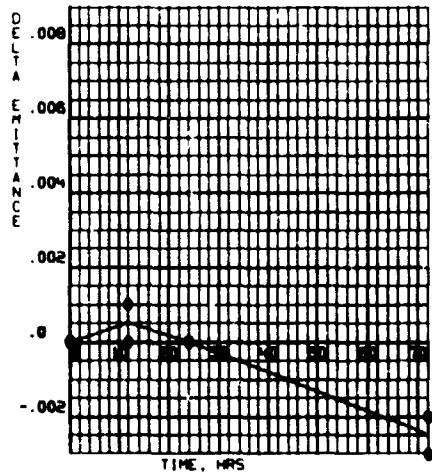
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAYS	EMITTANCE
	.0	.910+00
	4.2	.913+00
	.0	.910+00
	4.2	.913+00
	.0	.910+00
	150.0	.913+00
	.0	.904+00
	150.0	.907+00

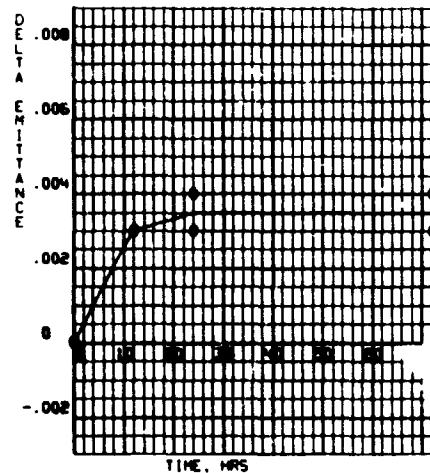
NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

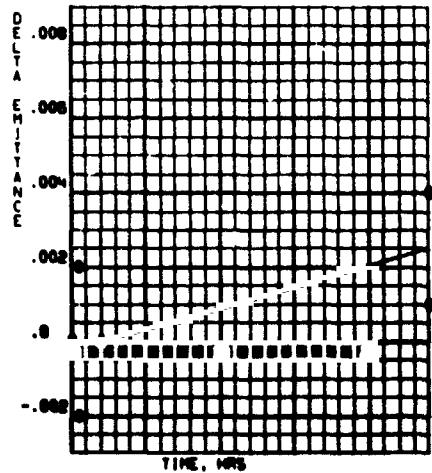
PROPERTY - DELTA EMISSANCE



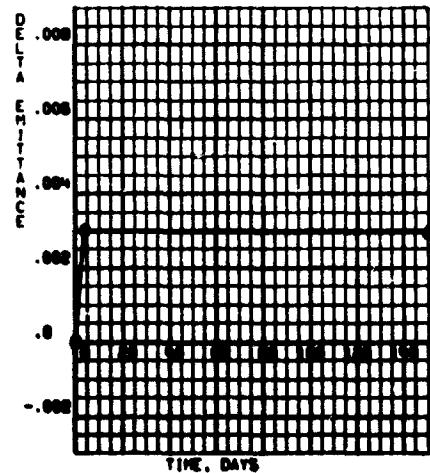
ENVIRONMENT 5
95 PERCENT R H 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT ?
WATER IMMERSION AT 70 DEG F
121 DEG C1



ENVIRONMENT (B1CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL -3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY -EMITTANCE

ENVIRONMENT B (EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1.E-03 TORR

F	DAY	EMITTANCE
	.0	.904+00
	4.2	.909+00
	.0	.904+00
	4.2	.908+00
	.0	.903+00
	150.0	.903+00
	.0	.905+00
	150.0	.905+00

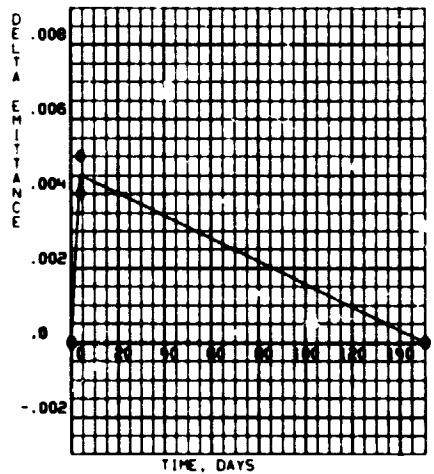
ENVIRONMENT B (GH)
25 PERCENT R.H. AIR/FLUORINE
MIXTURE AT 95 DEG F (35 DEG C), 4 HR

F	F	P.P.	TORR	EMITTANCE
		.000		.905+00
		.100-02		.906+00
		.000		.905+00
		.100-02		.905+00
		.000		.907+00
		.760+03	SAMPLE DESTROYED	
		.000		.905+00
		.760+03	SAMPLE DESTROYED	

NOTE, SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL 1)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .03 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL- 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY- DELTA EMITTANCE



MATERIAL - 3M BLACK VELVET PAINT(SERIFS 400) ON FIBERGLASS

PROPERTY - ABSORPTANCE

ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)

F	DAYS	ABSORPTANCE
	.0	.980+00
	10.0	.972+00
	.0	.980+00
	10.0	.973+00
	.0	.977+00
	150.0	.972+00
	.0	.975+00
	150.0	.969+00

ENVIRONMENT 2 (AB)
VACUUM, 1.E-06 TORR, 200 DEG F
(93 DEG C)

F	HOURS	ABSORPTANCE
	.0	.976+00
	24.0	.975+00
	.0	.972+00
	24.0	.972+00
	.0	.973+00
	240.0	.966+00
	.0	.972+00
	240.0	.968+00

ENVIRONMENT 2 (BCDE)
VACUUM, 1.E-06 TORR, EXPOSURE
TIME 240 HR

F	DEG R	DEG K	ABSORPTANCE
	-	-	.973+00
	660.	367.	.966+00
	-	-	.972+00
	660.	367.	.968+00
	-	-	.975+00
	530.	294.	.976+00
	-	-	.973+00
	530.	294.	.973+00
	-	-	.972+00
	140.	78.	.970+00
	-	-	.973+00
	140.	78.	.968+00
	-	-	.973+00
	37.	21.	.971+00
	-	-	.974+00
	37.	21.	.971+00

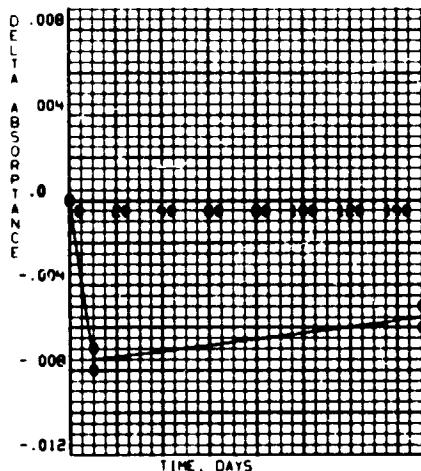
ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

F	HOURS	ABSORPTANCE
	.0	.975+00
	24.0	.972+00
	.0	.975+00
	24.0	.972+00
	.0	.975+00
	72.0	.973+00
	.0	.973+00
	72.0	.973+00
	.0	.974+00
	240.0	.976+00
	.0	.974+00
	240.0	.973+00

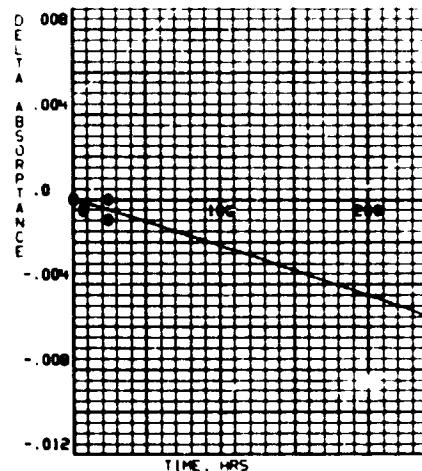
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

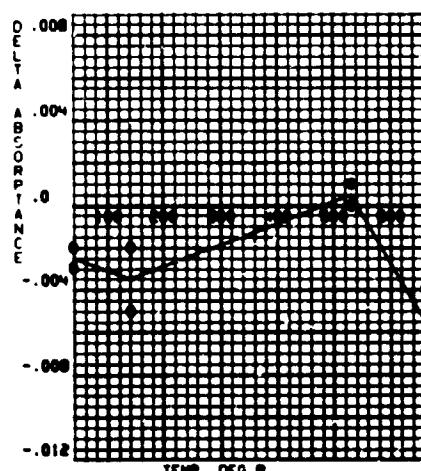
PROPERTY - DELTA ABSORPTANCE



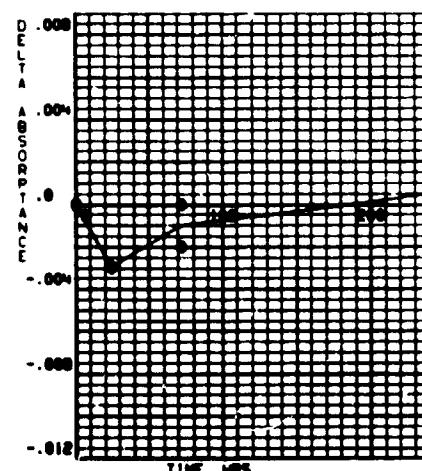
ENVIRONMENT 1
CONTROL, 70 DEG F (21 DEG C)



ENVIRONMENT 2(AB)
VACUUM, 1 E-06 TORR, 200 DEG F
(93 DEG C)



ENVIRONMENT 2(BCD)
VACUUM, 1 E-06 TORR, EXPOSURE
TIME 240 HR



ENVIRONMENT 3
HIGH TEMPERATURE, 200 DEG F
(93 DEG C) 40 PERCENT R.H.

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - ABSORPTANCE

ENVIRONMENT 5
95 PERCENT R.H., 95 DEG F
(35 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.972+00
	12.0	.973+00
I	.0	.972+00
	12.0	.973+00
I	.0	.973+00
	24.0	.975+00
I	.0	.972+00
	24.0	.975+00
I	.0	.972+00
	72.0	.970+00
I	.0	.972+00
	72.0	.968+00

ENVIRONMENT 6
95 PERCENT R.H./SALT AIR
95 DEG F (35 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.972+00
	12.0	.972+00
I	.0	.980+00
	12.0	.978+00
I	.0	.972+00
	24.0	.970+00
I	.0	.972+00
	24.0	.968+00
I	.0	.977+00
	72.0	.970+00
I	.0	.978+00
	72.0	.966+00

ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)

F	HOURS	ABSORPTANCE
I	.0	.975+00
	.5	.970+00
I	.0	.972+00
	.5	.970+00
I	.0	.975+00
	2.0	.975+00
I	.0	.972+00
	2.0	.970+00
I	.0	.975+00
	24.0	.972+00
I	.0	.977+00
	24.0	.972+00

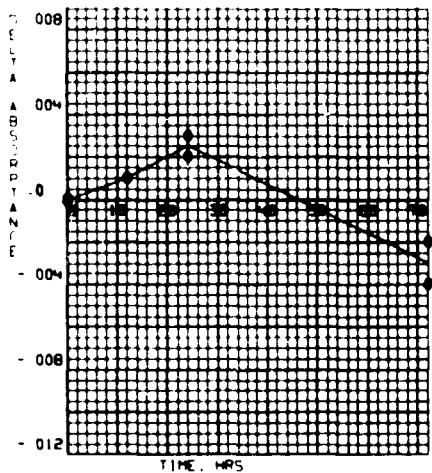
ENVIRONMENT 8 (CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) I.F=0.3 TORR

F	DAYS	ABSORPTANCE
I	.0	.972+00
	4.2	.973+00
I	.0	.975+00
	4.2	.974+00
I	.0	.972+00
	150.0	.975+00
I	.0	.972+00
	150.0	.978+00

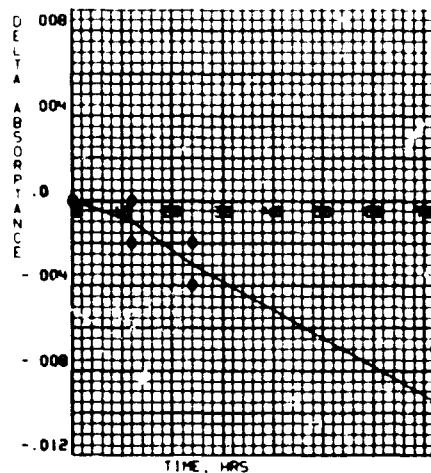
NOTE. .SEE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
.ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
.THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
THE E+01 ETC. IS THE EXPONENT OF 10
.THE PRE-EXPOSURE DATA ARE MARKED WITH I IN THE F COLUMN

MATERIAL: 3M BLACK VELVET PAINT-SERIES 400- ON FIBERGLASS

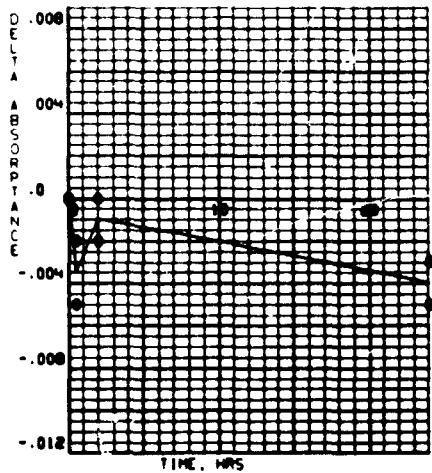
PROPERTY: DELTA ABSORPTANCE



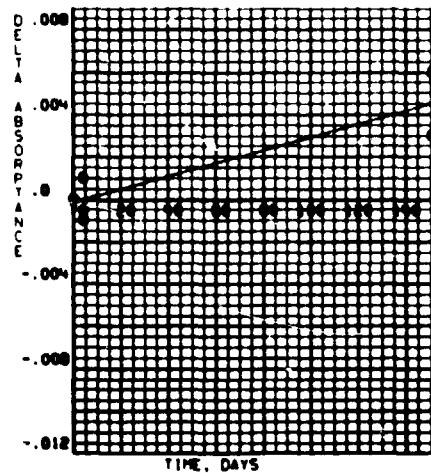
ENVIRONMENT 5
95 PERCENT R.H. 95 DEG F
(35 DEG C)



ENVIRONMENT 6
95 PERCENT R.H. /SALT AIR
95 DEG F (35 DEG C)



ENVIRONMENT 7
WATER IMMERSION AT 70 DEG F
(21 DEG C)



ENVIRONMENT 8(CD)
GASEOUS OXYGEN, 70 DEG F
(21 DEG C) 1.E-03 TORR

MATERIAL - 3M BLACK VELVET PAINT(SERIES 400) ON FIBERGLASS

PROPERTY - ABSORPTANCE

ENVIRONMENT 8 (EF)
 GASEOUS FLUORINE, 70 DEG F
 (21 DEG C) 1.E+03 TORR

F	DAY'S	ABSORPTANCE
	.0	.970+00
	4.2	.978+00
	.0	.970+00
	4.2	.979+00
	.0	.970+00
	150.0	.973+00
	.0	.970+00
	150.0	.973+00

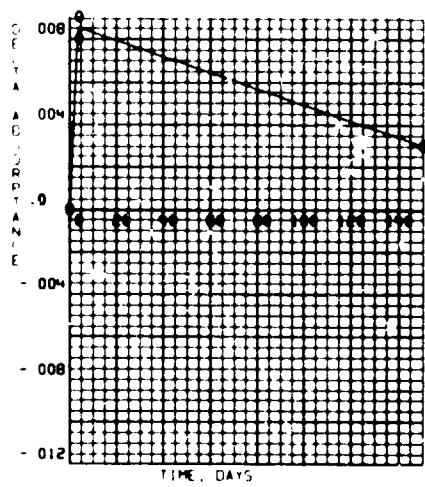
ENVIRONMENT 8 (GH)
 95 PERCENT R.H. AIR/FLUORINE
 MIXTURE AT 95 DEG F(35 DEG C).4 HR

F	F	P.P.	TORR	ABSORPTANCE
		.000		.970+00
		.100-02		.975+00
		.000		.970+00
		.100-02		.974+00
		.000		.970+00
		.760+03	SAMPLE DESTROYED	
		.000		.970+00
		.760+03	SAMPLE DESTROYED	

NOTE. .SFE TABLE 5 FOR IDENTIFICATION OF TEST MATERIALS(VOL I)
 .ACCURACY OF MEASUREMENTS IS ESTIMATED TO BE +/- .02 UNITS
 .THE DEPENDENT VARIABLES ARE IN SCIENTIFIC NOTATION
 .THE E+01 ETC. IS THE EXPONENT OF 10
 .THE PRE-EXPOSURE DATA ARE MARKED WITH | IN THE F COLUMN

MATERIAL: 3M BLACK VELVET - AINT/SERIES 4001 ON FIBERGLASS

PROPERTY: DELTA ABSORPTANCE



ENVIRONMENT (B1EF)
GASEOUS FLUORINE, 70 DEG F
(21 DEG C) 1 E-03 TORR

ADHESION TEST RESULTS

Material*: Series 400 Black Paint on Fiberglass, -F

ENVIRONMENT		EXPOSURE PARAMETERS			COATING ADHESION (PERCENT REMOVED, VISUAL ESTIMATION)
No.	DESCRIPTION	O ₂ or F ₂ Partial Press., Torr	TEMP °R (°K)	TIME, HR	
2	Vacuum, $\leq 10^{-6}$ Torr		660 (366)	24	0
			660 (366)	240	0
			530 (294)	240	0
			140 (78)	240	0
			37 (21)	240	0
3	200°F (93°C) 40% R.H.			24	0
				72	0
				240	0
5	95% R.H. at 95°F (35°C)			12	0
				24	0
				72	0
6	95% R.H./Salt Air at 95°F (35°C)			12	0
				24	0
				72	0
7	Water Immersion at 70°F (21°C)			0.5	0
				2	0
				24	0
8c, d	Gaseous Oxygen at 70°F (21°C)	10 ⁻³	100	0	
		10 ⁻³	3600	0	
8e, f	Gaseous Fluorine at 70°F (21°C)	10 ⁻³	100	0	
		10 ⁻³	3600	.0001/.0001*	
8g, h	95% R.H./F ₂ at 95°F (35°C)	10 ⁻³	4	0	
		760	4	Destroyed in environment	

* See Table 5 for complete identification of test material (Volume I).

** Two specimens

FLUORINE IGNITION TEST RESULTS (ENVIRONMENT 8B)

SPECIMEN (2 EA)	POST TEST INSPECTION	IGNITION PRESS PSIA (N/M ²)	PRES. SPIKE PSIA (N/M ²)
Single Aluminized Mylar	No sample solid material left. A little black soot and aluminum deposit left in can.	14.1 (9.7 x 10 ⁴)	44.5 (3.07 x 10 ⁵)
Double Aluminized Mylar	No damage or discoloration observed.	No ignition	-
Single Aluminized Kapton*	No damage or discoloration observed.	No ignition	-
Single Goldized Mylar	No sample solid material left. A little gold dust deposited on can surfaces.	13.0 (9.6 x 10 ⁴)	32.6 (2.25 x 10 ⁵)
Double Goldized Mylar	No damage or discoloration observed.	No ignition	-
Single Goldized Kapton*	No sample solid material left. Gold dust deposited on can surfaces.	7.3 (5.0 x 10 ⁴)	33.2 (2.29 x 10 ⁵)
Silk Net (with sizing)	No damage or discoloration observed.	No ignition	-
Silk Net (with sizing removed)	Black residue found in the bottom of the can.	Pressure data inadvertently not recorded but ignition pressure was < 14.7 psi (10 ⁵ n/m ²)	
Nylon Net	No sample solid material left. Some black deposits observed on can surfaces.	3.7 (2.6 x 10 ⁴)	25.0 (1.72 x 10 ⁵)
Tissuglass	No sample solid material left. Some black deposits found in can.	6.0 (4.1 x 10 ⁴)	16.2 (1.12 x 10 ⁵)
Dacron Net	No sample solid material left. Some black deposits found in can.	15.5 (1.07 x 10 ⁵)	31.6 (2.18 x 10 ⁵)
Beta Glass Cloth	No damage or discoloration observed.	No ignition	-
Beta Glass Cloth (Repeat Test)	Slight brownish discoloration.	Pressure data inadvertently not recorded but ignition pressure was < 14.7 psi (10 ⁵ n/m ²)	
Marmco Adhesive	Material partially burned. Extreme discoloration (black) where fluorine flowed onto sample.	1.1 (7.6 x 10 ³)	18 (1.24 x 10 ⁵)
Goodyear Adhesive*	No damage or discoloration observed.	No ignition	-
Polyurethane Foam	No sample solid material left.	2.9 (2.03 x 10 ³)	23.5 (1.62 x 10 ⁵)
Velcro Fasteners	Black solid material fragments remained.	4.8 (3.17 x 10 ⁴)	36 (2.48 x 10 ⁵)
Teflon	No damage or discoloration	No ignition	-
Thermatral Paint on Aluminum	White particles found in can. Sample sheets have burned spots.	9.2 (6.3 x 10 ⁴)	47 (3.24 x 10 ⁵)
Thermatral Paint on Fiberglass	Fiberglass partly burned and charred.	6.0 (4.1 x 10 ⁴)	33.2 (2.29 x 10 ⁵)
Black Paint on Aluminum	Black soot found on sample. One sample shows indication of heat.	1.39 (9.6 x 10 ³)	20.5 (1.41 x 10 ⁵)
Black Paint on Fiberglass	Black soot in can. Fiberglass partly burned and charred.	0.5 (3.4 x 10 ³)	37.4 (2.58 x 10 ⁵)

* Test was repeated with same results